

# HOSPITALS AND COMMUNITY HEALTH HIA:

## A Study of Localized Health Impacts of Hospitals

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# Contents

Reader's Guide	8
Executive Summary	10
Section 1: Introduction	15
<b>1.1 – Background</b>	<b>15</b>
<b>1.2 – Purpose</b>	<b>16</b>
<b>1.3 – Methodology</b>	<b>17</b>
1.3.1 – What is Health?	17
1.3.2 – Health and the Built Environment	18
1.3.3 – What is a Health Impact Assessment	19
Section 2: Hospitals and Community Health HIA Methodology	21
<b>2.1 – HIA Project Team</b>	<b>21</b>
<b>2.2 – Advisory Committee</b>	<b>21</b>
<b>2.3 – Screening</b>	<b>22</b>
<b>2.4 – Scoping</b>	<b>22</b>
2.4.1 – Study Area	23
2.4.2 – Study Population	24
2.4.3 – Existing Health Conditions	27
2.4.4 – Stakeholder Involvement	28
<b>2.5 – Survey of Stakeholders</b>	<b>30</b>
2.5.1 – Definition of Health	30
2.5.2 – Satisfaction with Neighborhood	31
2.5.3 – Walking and Biking Environment	32
2.5.4 – Health Impacts of Piedmont Hospital	33
<b>2.6 – Identification of Health Impacts</b>	<b>34</b>

Section 3: Overarching Issues	36
<b>3.1 – Anchor Institutions</b>	<b>37</b>
3.1.1 – Hospitals as Anchor Institutions	37
<b>3.2 – Existing Development</b>	<b>38</b>
3.2.1 – Existing Conditions	38
3.2.2 – Building Permits	43
3.2.3 – Related Plans	47
<b>3.3 – Selected Future Development</b>	<b>64</b>
<b>3.4 – Summary Remarks</b>	<b>64</b>
Section 4: Assessment of Impacts	65
<b>4.1 – Traffic</b>	<b>65</b>
4.1.1 – Impacts on Health	65
4.1.2 – Assessment	72
4.1.3 – Implications/Opportunities of New Projects	78
4.1.4 – Recommendations	81
<b>4.2 – Connectivity and Access</b>	<b>82</b>
4.2.1 – Connectivity, Access, and Health	83
4.2.2 – Assessment	90
4.2.3 – Implications/Opportunities of New Projects	115
4.2.4 – Recommendations	116
Section 5: Key Findings and Recommendations	117
Section 6: Conclusions	125



Appendices:	128
<b>A.1 – References</b>	<b>129</b>
<b>A.2 – HIA Literature Review</b>	<b>149</b>
<b>A.3 – Stakeholder Involvement Materials (Selected)</b>	<b>164</b>
A.3.1 – Neighborhood Organizations	164
A.3.2 – Letter to Piedmont Hospital [24 January 2008]	165
A.3.3 – Letter to Neighborhood Association Presidents [21 March 2008]	166
A.3.4 – Announcement in Neighborhood Newsletters/Website	168
A.3.5 – Informational Handout [April 2008]	169
A.3.6 – HIA Survey Questions and Results	171
<b>A.4 – Study Area Walkability Audit</b>	<b>179</b>
A.4.1 – Walkability Audit Data Sheet	179
A.4.2 – Walkability Audit Segment Map	180
A.4.3 – Walkability Audit Segment Analysis	181
<b>A.5 – Universal Design Standards</b>	<b>241</b>

## List of Figures

<b>FIGURE 1.1 – Determinants of Health</b>	18
<b>FIGURE 1.2 – Steps in the HIA Process</b>	20
<b>FIGURE 2.1 – Hospitals and Community Health HIA Study Area</b>	23
<b>FIGURE 2.2 – Most Vulnerable Populations in the Study Area (by block group)</b>	26
<b>FIGURE 2.3 – The Relationship Between the Built Environment and Health</b>	35
<b>FIGURE 3.1 – Aerial Photograph of Piedmont Hospital</b>	36
<b>FIGURE 3.2 – Study Area Zoning Classifications</b>	40
<b>FIGURE 3.3 – Meadow Near Tanyard Creek</b>	41
<b>FIGURE 3.4 – Bobby Jones Golf Course</b>	41
<b>FIGURE 3.5 – The Peach Bus Route (Route 110)</b>	42
<b>FIGURE 3.6 – Building Permits for New Construction in the Study Area (2000-2008)</b>	44
<b>FIGURE 3.7 – Piedmont Hospital Campus Map</b>	46
<b>FIGURE 3.8 – The BeltLine Map Detail #7 – Marietta Street to Piedmont Hospital</b>	48
<b>FIGURE 3.9 – The BeltLine Map Detail #1 – Piedmont Hospital to Grady High School</b>	48
<b>FIGURE 3.10 – Proposed BeltLine Transit Stops within the Study Area</b>	49
<b>FIGURE 3.11 – Redevelopment of the Proposed Peachtree Stop Transit Plaza</b>	50
<b>FIGURE 3.12 – Proposed Peachtree Road Diagram</b>	51
<b>FIGURE 3.13 – Brookwood Segment Context Map</b>	53
<b>FIGURE 3.14 – Brookwood Segment Existing Land Use Map</b>	54
<b>FIGURE 3.15 – Proposed Atlanta Streetcar System</b>	55
<b>FIGURE 3.16 – Streetcars on Peachtree Street in the 1940s</b>	56
<b>FIGURE 3.17 – ARC Transportation Improvement Programs in the Study Area</b>	58
<b>FIGURE 3.18 – Sidewalk Construction on Collier Road from Howell Mill Road to Ardmore Road (AT-AR-BP154)</b>	59
<b>FIGURE 3.19 – Bridge Replacement on Peachtree Road at CSX Railroad (AT-229)</b>	59
<b>FIGURE 3.20 – Inner-Core Feasibility Report – BeltLine C-Loop Concepts</b>	61
<b>FIGURE 3.21 – Inner-Core Feasibility Report – Points of Interests</b>	62
<b>FIGURE 3.22 – Inner-Core Feasibility Report – Segment Zones</b>	63
<b>FIGURE 4.1 – GDOT Traffic Count Collection Device Locations</b>	73
<b>FIGURE 4.2 – Stakeholder Input on Traffic Problems in the Study Area</b>	77
<b>FIGURE 4.3 – Level-of-Service (LOS) of Roads Near The Brookwood Development</b>	79
<b>FIGURE 4.4 – Level-of-Service (LOS) of Roads Near Proposed Collier Road Redevelopment</b>	80
<b>FIGURE 4.5 – Access and Connectivity in the Study Area</b>	91
<b>FIGURE 4.6 – Walkability Audit Data Sheet</b>	93
<b>FIGURE 4.7 – Walkability Audit Segments</b>	94
<b>FIGURE 4.8 – Access to Greenspace in the Study Area</b>	107
<b>FIGURE 4.9 – Study Area Supermarkets and Restaurants</b>	108
<b>FIGURE 4.10 – Study Area Land Use</b>	110
<b>FIGURE 4.11 – Number of Employees in Study Area</b>	112
<b>FIGURE 4.12 – Residents' Frequency of Walking and Biking Trips</b>	113
<b>FIGURE 4.13 – Crime Identified by Residents in the Study Area</b>	114
<b>FIGURE 4.14 – Undesirable Sidewalk Conditions Identified by Residents in the Study Area</b>	115
<b>FIGURE A.1 – Physical Activity Levels of Adults by Race</b>	151
<b>FIGURE A.2 – Physical Activity Levels of Adults by Education</b>	151
<b>FIGURE A.3 – Physical Activity Levels of Adults by Age</b>	152
<b>FIGURE A.4 – Examples of Buildings Illustrating “Visual Character”</b>	242
<b>FIGURE A.5 – Inclusive Playgrounds with Accessible and Reachable Design</b>	243
<b>FIGURE A.6 – Seating Features to Accommodate Special Needs</b>	244
<b>FIGURE A.7 – Wide Paths or Sidewalks with Adequate Use for Everyone</b>	245

## List of Tables

<b>TABLE 2.1</b> – Study Area Land Use Characteristics	24
<b>TABLE 2.2</b> – Study Area and City of Atlanta Population Profile	24
<b>TABLE 2.3</b> – Study Area and City of Atlanta Demographic Comparison (%)	25
<b>TABLE 2.4</b> – Crude Death Rate (per 100,000 population) from Selected Causes of Death	28
<b>TABLE 2.5</b> – Outreach to Study Area Residents	29
<b>TABLE 2.6</b> – Definition of Good Health by Stakeholders	30
<b>TABLE 2.7</b> – Factors Increasing Satisfaction with Neighborhood	31
<b>TABLE 2.8</b> – Impact of Conditions on Residents' Health (%)	32
<b>TABLE 2.9</b> – Walking and Biking Frequencies to Facilities (%)	32
<b>TABLE 2.10</b> – Factors That Can Increase Frequencies of Walking/Biking to Facilities (%)	33
<b>TABLE 2.11</b> – Impact of Living near a General Health Care Facility on Residents' Health (%)	34
<b>TABLE 2.12</b> – Impact of Living near Piedmont Hospital on Resident's Health (%)	34
<b>TABLE 3.1</b> – Multi-Family Building Permits for New Construction (2000-2008)	45
<b>TABLE 3.2</b> – Vehicular Level-of-Service (LOS) in Brookwood Segment (delay in seconds)	56

# Reader's Guide

This Hospitals and Community Health HIA report provides a summary of the research and analysis of the localized health impacts of Piedmont Hospital, one of the major anchor institutions along the Peachtree Corridor.

In **Section 1**, the report introduces readers to the background and purpose of the study of localized health impacts of hospitals, in this case Piedmont Hospital. **Section 2** describes the methodology that was applied to conduct the HIA, and identifies the study area and characteristics of the affected population. **Section 3** begins to explore the idea of anchor institutions, summarizes the existing conditions of the neighborhoods surrounding Piedmont Hospital, and discusses recent proposals for new development. The major issues affecting health around Piedmont Hospital are further addressed and analyzed in **Section 4**. **Section 5** summarizes the evidence and analysis to factors that influence health, such as traffic, connectivity, and access to opportunity, and discusses how Piedmont Hospital might affect these factors in the study area. This research focuses on specific health issues and addresses these factors to the neighborhoods surrounding Piedmont Hospital. Recommendations, addressing the major health issues and aimed at expanding positive health impacts and removing or mitigating negative health impacts, conclude the section.

The report concludes with **Section 6**, which provides an overview of the health and health-related impacts of Piedmont Hospital and describes the lessons the project team learned from conducting the HIA. The **Appendix** provides supporting documents including the survey of surrounding neighborhoods and the walkability audit, as well as the complete review of literature pertaining to health issues and the built environment.

Throughout this report, readers will see terminology that may be unfamiliar. Following are brief definitions of these terms:

**Health:** For the purpose of the Hospitals and Community Health HIA, health has been defined as “a state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity” (World Health Organization, 1946) and the ability of an individual or group “to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (World Health Organization, 1986).

**Health Impact Assessment (HIA):** A Health Impact Assessment is “a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population” (World Health Organization, 1999). HIAs explicitly consider social and environmental justice issues, adopt a multidisciplinary and participatory process, and use both qualitative and quantitative evidence, as well as transparency in the process.

**Anchor Institutions:** Anchor institutions include “universities, medical complexes, arts and culture institutions, stadiums, public utilities and some large corporations [which] are critical to the economic health and civic pride to their home cities and regions due to their resources, especially high levels of employment and purchasing power” (University of Pennsylvania, 2007). As such, anchor institutions play central roles in their communities.

**The Atlanta BeltLine:** The BeltLine is a transit, trails, parks, and redevelopment project that uses a 22-mile loop of largely abandoned freight rail lines that lie between two and four miles from the city center (Atlanta BeltLine, Inc.). It will affect approximately 45 neighborhoods, touching all council districts in the City of Atlanta. The BeltLine will result in improvements to 700 acres of existing parks and the addition of 1,300 acres of new greenspace and parks. The BeltLine vision includes 33 miles of new multi-use trails connecting 40 parks and a 22-mile loop of rail transit service, with an anticipated daily ridership of over 73,000 people.

**Piedmont Hospital:** Piedmont Hospital, part of Piedmont Healthcare, has served Atlanta and the surrounding communities since 1905 (Piedmont Hospital website). It is a not-for-profit hospital and the surplus revenue generated by the hospital is reinvested back into the hospital and its technology, allowing for more advanced, specialized care for the community. The 26-acre main campus in South Buckhead, stretches along Peachtree Road, while additional off-site facilities and primary-care physician offices are located throughout metro Atlanta.

**Peachtree Road/Street:** The Peachtree Corridor is the main north-south street of Atlanta, Georgia. The majority of the Hospitals and Community Health HIA study area is located along Peachtree Road. However, the name does switch to Peachtree Street in the southern part of the study area near the intersection of 26th Street.

**Robert Wood Johnson Foundation (RWJF):** The Robert Wood Johnson Foundation focuses on the pressing health and healthcare issues facing our country. As the nation’s largest philanthropy devoted exclusively to improving the health and healthcare of all Americans, the Foundation works with a diverse group of organizations and individuals to identify solutions and achieve comprehensive, meaningful, and timely change. For more than 30 years, the Foundation has brought experience, commitment, and a rigorous, balanced approach to the problems that affect the health and healthcare of those it serves. When it comes to helping Americans lead healthier lives and get the care they need, the Foundation expects to make a difference in your lifetime. For more information, visit [www.rwjf.org](http://www.rwjf.org).

# Executive Summary

The Hospitals and Community Health HIA project examines the localized impacts of a hospital, operating as a major anchor institution, on the health outcomes of residents living nearby. The study includes a Health Impact Assessment (HIA) to examine the impact of transportation, land use, urban design and future growth on the residents and neighborhoods located in the vicinity of Piedmont Hospital in Atlanta, Georgia. The final product of this HIA is a set of evidence-based recommendations that inform decision-makers and the general public about the health-related issues associated with the project and suggest how to enhance positive health impacts while mitigating negative health impacts. Results of this HIA will be instrumental in informing future decisions regarding land use, transportation, and urban design by both Piedmont Hospital and by the surrounding communities. This project builds on the Atlanta BeltLine Health Impact Assessment (HIA) which, was conducted with funding from the Robert Wood Johnson Foundation (RWJF) and with technical assistance from the Centers for Disease Control and Prevention (CDC). The BeltLine HIA was completed in May 2007.

## Health and the Built Environment

Many external factors—the environment where we live, work, and go to school; and the social and economic factors, policies, and services that shape the environment—affect the ability to be healthy.

In recent years research has suggested a linkage between the characteristics of the built environment and human health outcomes, such as respiratory and cardiovascular health, fatal and non-fatal injuries, physical fitness, obesity, mental health, and social capital. Although causality is not conclusively proven, there is sufficient evidence linking elements of the built environment and health to warrant inclusion of health considerations in project and policy decisions.

As such, there is reason to believe that Piedmont Hospital as an anchor institution, and the proposed future plans for the Peachtree Corridor and other areas, will have an effect on the health of those living in nearby neighborhoods. Furthermore, the lessons learned in this area can inform new development and redevelopment throughout the city and region wherever anchor institutions are present.

# The Health Impact Assessment

An HIA is “a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of these effects within the population.” HIAs explicitly consider social and environmental justice issues, adopt a multidisciplinary and participatory process, and use both qualitative and quantitative evidence as well as transparency in the process. An HIA is intended to make health considerations part of the decision-making process.

To conduct an HIA of the Piedmont Hospital area, a team of researchers with expertise in public health and planning was assembled. This multi-disciplinary team drew from expertise on issues relating to city planning, including transportation, land use, urban design, economic development, environmental management, and public policy, as well as public health, including epidemiology and environmental health. The study team’s efforts included a walkability audit to measure connectivity in the study area and a survey of local residents. The study team also met with community representatives and community groups several times during the HIA process.

## Piedmont Hospital and Its Environs

Piedmont Hospital is an ideal case study to examine how an anchor institution can impact surrounding neighborhoods. It is set in a largely residential neighborhood, but also adjacent to Atlanta’s signature corridor, Peachtree Road. There are many major planning efforts underway in the community which could transform both the area’s physical landscape and its primary functions.

### Anchor Institutions

Anchor institutions are the universities, museums, hospitals, libraries, parks, performing arts centers, and sports arenas that help construct a city’s distinctive identity and vibrancy. These institutions are sources of civic pride and play a central role in the community. In addition, a community’s economic well-being is becoming increasingly tied to anchor institutions. In many places, these institutions have surpassed traditional manufacturing corporations to become their region’s leading employers (Maurrasse, 2007).

Along with universities, hospitals represent the largest and most numerous nonprofit anchors: in both its daily operations and its decisions for the future, a hospital can substantially impact the community at large. Urban hospitals can have both positive and negative impacts on the surrounding community. Community residents rely on hospitals to bring life into the world, care for the aged, ensure safety when a disaster occurs, educate people about the impact of lifestyles on their health, and provide comfort at the end of life, in addition to meeting basic health care needs (St. Peter’s Hospital, 2006). Additionally, hospitals generate millions of dollars for the local economy by purchasing an array of goods and services, as well as by their capital spending.

Hospitals also generate high levels of traffic that not only congest neighborhood streets, creating dangerous scenarios for pedestrians and families with children. The constant flow of traffic and noise generated by ambulance sirens, make hospitals noisy neighbors.

### Demographics

The population within the study is, on average, wealthier and with better access to motorized transportation than citizens of the City of Atlanta; the study area also has a smaller percentage of

the population belonging to minority ethnic groups than does the City of Atlanta. However, the most vulnerable populations, including elderly populations, could be found living closest to Piedmont Hospital. These residents may find it convenient to be near a major medical facility, but are also more vulnerable to negative health impacts generated by the hospital and its surrounding traffic.

## Existing Development

The study area can be roughly divided into primarily residential and commercial areas. Piedmont Hospital itself employs over 8,000 people, while the entire area employs approximately 11,900 people in office jobs, service and retail positions, construction jobs, medical services, and home offices. Larger employers are primarily located on the Peachtree Corridor, but employers are located throughout the study area.

The principal stakeholder issues “revolve around Piedmont Hospital and the severe traffic levels it generates at the intersection of Peachtree Road and Collier Road” (Peachtree Corridor Partnership, 2007a). Additional development in the area is slated for completion in the near future and will potentially increase traffic around the already congested intersection. Stakeholders also want to preserve the residential character of the Brookwood Segment while encouraging pedestrian-friendly development and public greenspace (Peachtree Corridor Partnership, 2007a). A walkability audit, conducted by the HIA study team, found that many of the segments around Piedmont Hospital are not friendly to pedestrians or bicyclists, with broken or uneven sidewalks, little buffer between pedestrian and automotive traffic, and poor signage and lighting. In a survey conducted for this HIA, 93 percent of the total respondents said that from their home it was possible to walk or bike to the grocery store, but over 56 percent of the respondents said they walked or biked to the store either “a few times a year” or “never”.

## Related Plans

Because of its location on a major artery, the Peachtree Corridor, parts of the HIA study area are included in many existing and redevelopment plans by different governing groups:

- **The BeltLine:** The BeltLine would have six transit stops within the study area, including an elevated transit plaza with connections to Peachtree Road. Implementation of the BeltLine will also increase the number of trails and connections to trails, and the general amount of greenspace, within the study area.
- **Peachtree Corridor:** In 2007 the Peachtree Corridor Task Force recommended a 25-year, \$1 billion vision to transform the city’s signature street into a boulevard characterized by high-quality streetscapes, pocket parks and public spaces, sidewalks, consistent signage, attractive lighting, and bicycle lanes. The increased pedestrian activity would increase demand for public spaces, a need that Corridor planners believe could be met by transforming Piedmont’s front lawn into a green space with existing tree canopies, new walkways, plazas, seating areas, public art, water features, and garden space.
- **Atlanta Streetcar:** The proposed streetcar line would run along the Peachtree Corridor from downtown Atlanta, enhancing Peachtree Road as a tourist destination and increasing mobility options for residents and visitors.
- **City of Atlanta Comprehensive Development Plan:** The City of Atlanta plans to add three new bicycle facilities to the study area by 2019, and multiple pedestrian facilities by 2023.



# Potential Health Impacts of Concern

## Traffic

The study area includes the Peachtree Corridor, which carries heavy volumes of traffic with congestion occurring at critical points. Additionally, the Collier Road corridor experiences heavy traffic congestion due to cut-through traffic and hospital traffic and, despite the presence of sidewalks, can be a potentially dangerous environment for pedestrians and bicyclists. The area has been the site of a large number of automobile accidents in recent years.

Even with the proposed improvements and additions to pedestrian and bicycle facilities, traffic issues are likely to persist in the study area. The majority of residents surveyed for this HIA claimed that automobile traffic within the study area was heavier than that of other neighborhoods, with almost 25 percent of respondents claiming traffic was “heavy traffic.” They also named “fast automobile traffic” (57 percent) and “congested roads” (34 percent) as contributing to feelings of being unsafe in their neighborhood.

## Connectivity and Access

Connectivity and accessibility are crucial elements in achieving a healthy community. Connectivity refers to an area’s walkability and bikeability, and the ease with which a person may get to various destinations. The term access refers to an individual’s or group’s ability to find health-promoting goods, services, amenities, and opportunities at reasonable cost, in reasonable time, and with reasonable ease (Social Exclusion Unit, 2003). Specific health conditions associated with the lack of access to health-promoting amenities include obesity, diabetes, heart disease, poor mental and social health and poor physical condition (CQGRD, 2007). There are no MARTA rail stops within the study area, and two bus lines that run on alternating schedules.

The streets in the study area show a relatively good amount of connectivity in that streets are continuous and have connections in several places to other streets. Sidewalks run alongside roads in most places and are generally continuous with connections to other sidewalks. However, blocks are relatively long, discouraging walking and bicycling. There are currently no extensive networks of multi-use trails in the area, though there are available parks and areas of greenspace.

The Walkability Audit conducted for this study clearly outlines the vulnerability of the pedestrian and the difficulty of walking, running, or cycling to parks, trails, or other commercial and social amenities in the existing area. Sidewalks are often deteriorating and in some cases obstructions make pedestrian passage challenging.

## Key Findings and Priority Recommendations

As an anchor institution, Piedmont Hospital has a large amount of influence over its surrounding neighborhoods. Residents and visitors depend on Piedmont Hospital for jobs, for medical care both urgent and ongoing, for health information, and for emergency aid. The hospital's location has influenced future development plans which will substantially change the character of the study area, potentially adding trails and greenspace, increasing transit options, adding new buildings, and generating new traffic.

The study team makes the following recommendations for increasing opportunities for health and mitigating negative health impacts in the study area:

- Create level sidewalks with ample buffers between pedestrians and traffic particularly along streets carrying large volumes of traffic.
- Improve perceptions of safety by adding well-maintained lighting.
- Create bike lanes, clearly marked, with sufficient room for bicyclists and cars.
- Factor pedestrian and bicycle access when making future decisions regarding hospital planning, including expansions and positioning of emergency facilities.
- Create liaisons between the hospital and community groups to improve communication, create new opportunities for health education, and allow for community input into hospital planning.
- Increase transit usage and provide other ways of accessing the hospital.
- Install and improve both vehicular and pedestrian signage along all routes leading to the hospital.
- Use urban design and universal design methods to develop safe connections between the hospital, neighborhoods, and other local destinations.
- Require improvements to the intersection of Peachtree Road and Collier Road to ensure it is a safe pedestrian and bicycle environment.
- Make improvements to the pedestrian environment which could include: improving the quality of the sidewalks; ensuring adequate sidewalk widths; increasing the number of crosswalks; increasing and maintaining lighting for pedestrians; adding pedestrian signals to existing intersections; narrowing roadways or lanes; reducing the number of lanes, adding medians, adding textured pavement; adding speed tables; and adding or upgrading landscaping.

# Section 1:

## Introduction

### 1.1 – Background

This project builds on the Atlanta BeltLine Health Impact Assessment (HIA), which was completed by the Center for Quality Growth and Regional Development (CQGRD) and the Centers for Disease Control and Prevention (CDC) in May 2007. The BeltLine is an ambitious project to add parks, trails, transit and new developments around the core of the city. Piedmont Hospital, which is located in one of the BeltLine's key redevelopment nodes, is an ideal case study to examine how anchor institutions impact the surrounding neighborhoods. It is set in a largely residential neighborhood, but also adjacent to Atlanta's signature corridor, Peachtree Road. The neighborhoods immediately adjacent to the hospital include Ardmore Park, Brookwood, Brookwood Hills, Collier Hills, Collier Hills North, Colonial Homes, Peachtree Hills, and Peachtree Battle, with surrounding influences in Loring Heights, Berkeley Park, and Underwood Hills.

Peachtree Road has been targeted for significant public and private investment including both retail and residential development. In addition, the area is one that is included in the BeltLine redevelopment and other significant planning efforts. Recently, a large number of cities are experiencing substantial increases in their population and are also allocating resources to major redevelopment activities. In many instances, these redevelopment projects almost guarantee an increasing density and an even more urban environment. As a result, increasing urbanization and densification is affecting not only the geographic footprint but also the operation and characteristics of anchor institutions located in the hearts of urban areas. The area surrounding Piedmont Hospital, immediately adjacent to one of the fastest growing and most affluent retail and residential corridors in the southeastern United States, is an example of this trend.

The study area population is predominantly white with most residents being of working age and a per capita income of over \$47,000. It is a fairly affluent area with less than 10 percent of the study area population living below the poverty level. This is in contrast to the City of Atlanta where more than 20 percent of the population lives below the poverty level. The study area population also tends to have fewer youths than the city and is expected to increase its population by approximately 26 percent by the year 2030 (Atlanta Regional Commission, 2007a). While a priority for the hospital Health Impact Assessment is to identify the impacts of the hospital on the most vulnerable populations it is necessary to define those categories. For purposes of the study, particularly vulnerable populations include; older adults, children, renters, citizens with low income, and those who are without an automobile.

## 1.2 – Purpose

The purpose of the study is to conduct a retrospective health impact assessment (HIA) of the impacts of transportation, land use, and urban design on the residents and neighborhoods located in the vicinity of Piedmont Hospital. This retrospective HIA allows us to increase our understanding of the health impacts associated with the location of a large regional institution, such as hospitals or other healthcare facilities located near or within a primarily residential area. In addition, we will frame much of our analysis from a prospective view in order to identify how future changes in the area (BeltLine, the Peachtree Corridor, other transportation improvements, an increasing population, and potential changes to the hospital) could be mitigated, constructed or implemented in a way that potentially lessens or addresses a number of negative health impacts. The HIA will contribute to a body of data and information that will inform future HIAs. Furthermore, this study will be instrumental in informing future decisions regarding land use, transportation, and urban design policies specific to this area. We will propose actions to mitigate or remove negative impacts and enhance positive impacts in the surrounding corridors, streets and neighborhoods.

The Hospitals and Community Health HIA includes a community and stakeholder involvement process that is largely focused on the residents of the study area. In addition, it includes meetings and discussions with elected officials and others representing the affected population. By “affected population” we mean nearby residents, employees of the hospital and surrounding businesses, and patients and visitors to the hospital and nearby medical facilities. In many instances, these discussions have included practitioners involved in the creation and implementation of transportation, land use, and urban design policies and plans for the study area. A survey of stakeholders was also conducted in both electronic and paper form to gauge community concerns about health impacts and the role of the hospital. The data analysis also includes an inventory of proposed construction and serves as a benchmark of indicators to provide guidance for future projects involving transportation, land use, and urban design in the City of Atlanta.

The collected data is used to analyze the existing health-related impacts of Piedmont Hospital on the study area, specifically as they relate to transportation, land use, and urban design. The recommendations focus on creating a healthier more sustainable neighborhood. This includes the development of a strategy for the implementation of recommendations, and guidance in including health and the built environment in redevelopment discussions.

What is a healthy neighborhood? A healthy neighborhood promotes active living through good design—appropriate density, land use mix, street connectivity, awareness of the human scale, attention paid to aesthetics—and by being safe and being perceived as safe. Healthy neighborhoods promote accessibility both within and between neighborhoods. They provide opportunities to be actively engaged with family and community and buffer inhabitants from unhealthful outcomes and things. Finally, a healthy neighborhood provides affordable and appropriate housing choices for residents in all stages of life. The neighborhoods around Piedmont Hospital benefit from access to local health care, but they also face the realities of the presence of the hospital and the requirements of 24-hour access and ambulance service create threats to health including safety, stress, noise, and limited ability to walk. As indicated earlier, the study area is experiencing an explosion of growth that is expected to continue, making this a critical time to address the existing and potential health impacts of development with the goal of resolving long-standing, localized problems.

## 1.3 – Methodology

### 1.3.1 – What is Health?

Many people define health simply as the absence of disease—that living without disease is to be healthy. Such a definition relegates health to the medical professions charged with protecting good health and overcoming or managing poor health. Unfortunately, such a narrow definition fails to recognize the multidimensional factors that influence health.

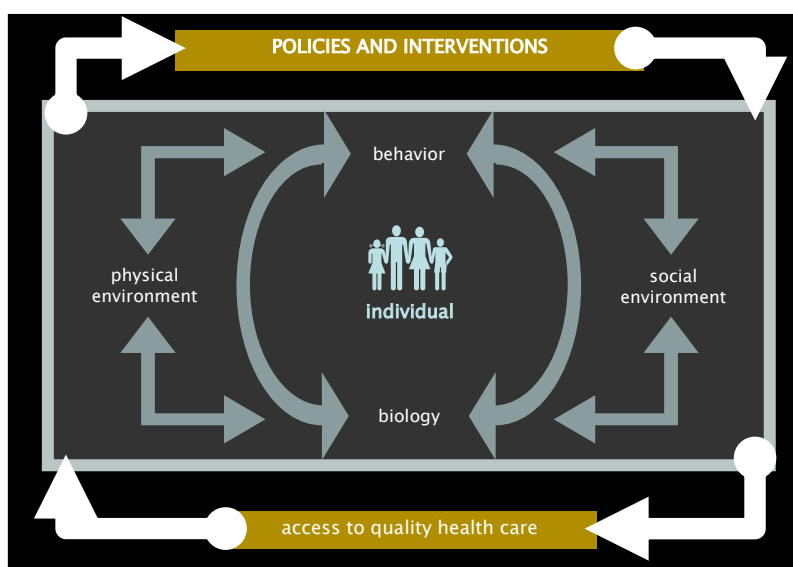
In 1941, American Public Health Association President C.E.A. Winslow recognized this distinction, writing:

Thirty years ago, our major emphasis was transferred from the physical environment to the individual. Today, we must shift our gaze from the individual back to the environment, but in a broader sense... to the whole social and economic environment in which the individual lives and moves and has his being (Krieger and Higgins, 2002).

This broader context of health was repeated in the 1946 World Health Organization Constitution, which defines health as “a state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity” (World Health Organization, 1946). This definition was further expanded in the 1986 Ottawa Charter for Health Promotion to include the ability of an individual or group “to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (World Health Organization, 1986).

Although these definitions of health have been criticized as “utopian” (Fehr, 1999), they are important in their recognition that numerous factors influence the ability to be healthy. Known as health determinants, these include biological, social and economic, environmental, lifestyle, services, and policy factors (see FIGURE 1.1) (Ison, 2000). Science has shown that the most significant determinants of health are very personal, based on genes, sex, and age (the biological factors) and behavior, like diet, activity levels, sexual behavior, and the consumption of drugs and alcohol. Yet many external factors—the environment, where we live, work, and go to school, and those social and economic factors, policies, and services shaping the environment—affect the second half of the definition of health, the ability “to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (World Health Organization, 1986). It is these health determinants which Piedmont Hospital as an anchor institution has the ability to shape.

**FIGURE 1.1 – Determinants of Health**



SOURCE: Concept developed by Healthy People 2010;  
Visualization by Center for Quality Growth and Regional Development (CQGRD).

### 1.3.2 – Health and the Built Environment

The previously mentioned expanded definitions of health are important in their recognition that numerous causes influence the ability to be healthy. Known as health determinants, these factors include biological, social, and economic, environmental, lifestyle, services, and policy. Many external factors—the environment where we live, work, and go to school; and the social and economic factors, policies, and services that shape the environment—affect the ability to be healthy.

The built environment is the manmade surroundings that provide the setting for human activity. It is composed of land-use patterns, transportation systems, and urban design. Land-use patterns establish the proximity of different activity centers and spatially determine where we do things—work, school, shop, and other activities. Transportation connects the activities that have been organized into the land-use patterns; the transportation system encompasses all transportation infrastructure. Design determines how far a building is from the street, the width of the sidewalk, and the placement of street trees and benches. Design instructs the characters of the buildings and sets the overall aesthetic qualities of the constructed environment.

In recent years, research has suggested a linkage between the characteristics of the built environment and human health outcomes, such as respiratory and cardiovascular health, fatal and non-fatal injuries, physical fitness, obesity, mental health, and social capital. Although causality is not conclusively proven, there is sufficient evidence linking elements of the built environment and health to warrant inclusion of health considerations in project and policy decisions.

### 1.3.3 – What is a Health Impact Assessment?

A Health Impact Assessment (HIA) is “a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population” (World Health Organization, 1999). Four values are integral to the HIA: **democracy**, **equity**, **sustainable development**, and the **ethical use of evidence** that emphasizes a rigorous structured analysis based on scientific disciplines and methodologies. HIAs explicitly consider social and environmental justice issues, adopt a multidisciplinary and participatory process, and use both qualitative and quantitative evidence, as well as transparency, in the process. HIAs are intended to make health considerations part of the decision-making process. Furthermore, HIAs seek to link these impacts to a given segment of the population (for example, children, older adults, people living in poverty, or residents of a particular neighborhood). The final product of an HIA is a set of evidence-based recommendations intended to inform decision-makers and the general public about the health-related issues associated with the project. The recommendations provide practical solutions that seek to magnify positive health outcomes and minimize negative impacts.

The HIA methodology is based on the social model of health accepted by serious national and international agencies. There are three main types of HIAs. Prospective HIAs are conducted before a policy or project is implemented; retrospective HIAs take place after a policy or project is implemented; and concurrent HIAs are simultaneous and are more common in projects or policies that are implemented over an extended period of time. There is also a differentiation in HIAs based on the amount of time and effort, leading to distinctions between rapid, intermediate, and comprehensive assessments (Ison, 2000).

There are a number of different methodologies for conducting an HIA, all sharing several critical steps which are illustrated in FIGURE 1.2. These steps are:

**Screening:** Determines whether or not there exists the potential for significant and unknown health impacts as a result of a policy, program, or project;

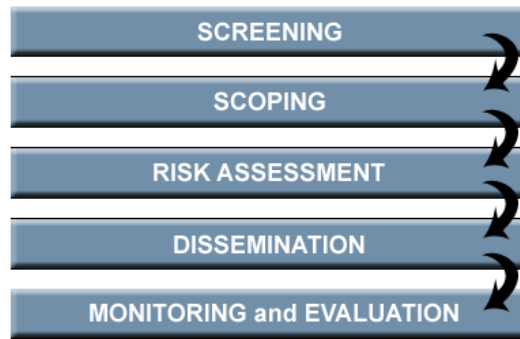
**Scoping:** Establishes the study area boundaries, identifies possible consequences, and determines a management approach for the HIA;

**Appraisal/Risk Assessment:** Considers the nature and magnitude of health impacts and the affected population;

**Dissemination:** Circulates results of the HIA to decision-makers, individuals implementing the plan/policy, and community stakeholders;

**Monitoring and Evaluation:** Reviews the effectiveness of the HIA process and evaluates the actual health outcomes as a result of the project or policy.

**FIGURE 1.2 – Steps in the HIA Process**



SOURCE: Center for Quality Growth and Regional Development (CQGRD)

Section 2 of this report enumerates the ways in which this methodology was applied for the Hospitals and Community Health HIA.

The Hospitals and Community Health HIA identifies both positive and negative impacts on the health of residents in the surrounding neighborhoods. This HIA provides recommendations to overcome or mitigate some of the negative impacts of the affect of Piedmont Hospital, but it is also important to emphasize the positive impacts of this anchor institution. The Hospitals and Community Health HIA also reinforces the link between public decisions and public health consequences and promoted a continuing dialogue between decision-makers, city planners, and public-health experts on strategies to create a healthy environment.



# Section 2:

## Hospitals and Community Health HIA Methodology

The Hospitals and Community Health HIA follows the critical steps of any form of HIA. These include **screening**, **scoping**, **appraisal/risk assessment**, **dissemination**, and **monitoring and evaluation**, as previously described. This section of the report provides an overview of each of these steps in relation to the Hospitals and Community Health HIA.

### 2.1 – HIA Project Team

To conduct an HIA of the Piedmont Hospital area, a team of researchers with expertise in public health and planning was assembled. This multi-disciplinary team drew from expertise on issues relating to city planning, including transportation, land use, urban design, economic development, environmental management, and public policy, as well as public health, including epidemiology and environmental health. This team was responsible for the scoping and appraisal steps of the HIA.

### 2.2 – Advisory Committee

The Brookwood Alliance, an alliance of six neighborhood groups, provided assistance to the team with public outreach and project direction and constituted an advisory committee of the whole. The Brookwood Alliance is composed of Ardmore Park Neighborhood Association; Brookwood Civic Association, Inc.; Brookwood Hills Community Club, Inc.; Collier Hills Civic Association, Inc.; Collier Hills North Neighborhood Association; and Loring Heights Neighborhood Association, Inc. The communities represented by these groups are located around the Brookwood Segment of the Peachtree Corridor and together comprise in excess of 1,000 homes. More information about interactions with this group is noted in Section 2.4.4.

## 2.3 – Screening

The idea for the Hospitals and Community Health HIA grew out of the previously conducted BeltLine HIA. In collecting data that would be used for the BeltLine HIA, the team observed that certain large or anchor institutions, such as Piedmont Hospital, found within the study area could potentially have their own significant impact on the health of surrounding residents, workers, and visitors. These anchor institutions are those large institutions that help construct a city's distinctive identity and vibrancy, and thus play a central role in the community.<sup>1</sup> Because of their location-based placement and clientele, these institutions are anchored into place, making them mainstays in the communities and further reasserting their influence upon the community. It was determined that a new study should be conducted in order to follow these suggestions towards definitive conclusions on the specific impacts of Piedmont Hospital and anchor institutions on the surrounding community.

Conversations between those conducting the BeltLine HIA, as well as community groups, led to curiosity on the part of the research team about the impact of an urban hospital as an anchor institution. Since Piedmont Hospital fell within the boundaries of the previously conducted BeltLine HIA, its impacts on surrounding neighborhoods was of immediate interest. While the benefits of a hospital to a larger community—in this case, the City of Atlanta and the metropolitan region—might seem obvious, the BeltLine HIA results suggested the possibility that the impacts of Piedmont Hospital on its immediate vicinity might be negative as well as positive and that they might be uniquely different from those of the BeltLine in general.

The study team collected and analyzed information to determine the potential of the hospital to impact health in the surrounding community through noise, traffic congestion, safety, physical activity, air quality, accessibility, and social capital. In addition to the hospital, the impacts of other physical elements owing their existence to the presence of the hospital, such as complementary medical facilities and associated land uses like restaurants and other service-oriented businesses used by patients, visitors, and hospital employees, were measured and analyzed.

The near future will present many opportunities to create new positive impacts for those living, working, and visiting the HIA study area. Further, there will be an opportunity to mitigate present negative health impacts identified by the HIA. Piedmont Hospital will be one of the major nodes of the BeltLine project (see Section 3.2.3), creating new parks, paths, public transit, and private redevelopment along its loop through Atlanta's in-town neighborhoods. In addition, the Peachtree Corridor project will improve Peachtree Road/Street from downtown Atlanta to Buckhead through streetscape upgrades and the addition of a streetcar. These two major projects, as well as the general resurgence of interest in redeveloping the interior of Atlanta, provide a bevy of openings to improve the health impacts within the study area. The Hospitals and Community Health HIA will help to inform those responsible for making these improvements.

## 2.4 – Scoping

In the HIA process, scoping calls for a broad outline of the possible negative consequences and benefits and identifies the boundaries for appraisal, as well the steps for management. In this case, the team used the scoping phase to identify the parameters of the assessment, the affected and most vulnerable populations, and potential key health impacts. Each of these elements is described below.

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<sup>1</sup> For more information regarding anchor institutions, please see Section 3.1.

### 2.4.1 – Study Area

The project team recognized that the impacts of Piedmont Hospital, both positive and negative, would be felt not only by immediately adjacent areas, but by surrounding neighborhoods as well. Therefore, the team set about deciding an appropriate study area from which to conduct appraisals of potential health impacts, both positive and negative. The team decided to use an area roughly bounded by I-75 and I-85 on the southwest and southeast sides, respectively, and Peachtree Battle Avenue and Lindbergh Drive on the north side (see FIGURE 2.1). It should be noted that the study area is entirely within the boundary of the City of Atlanta and Fulton County.

**FIGURE 2.1 – Hospitals and Community Health HIA Study Area**



SOURCE: Center for Quality Growth and Regional Development (CQGRD)

The study area consists of approximately 2,146 acres, or slightly greater than 2 percent of the City of Atlanta. Approximately 1,100 acres (or 51.9 percent) of the study area are used for residential purposes (see TABLE 2.1). According to the U.S. Census, there were approximately 8,800 housing units in the study area in 2000 (U.S. Census, 2000) and that has risen to approximately 10,000 in 2007 (Atlanta Regional Commission, 2007a). There were approximately 11,900 jobs in the study area in 2006 (Claritas BusinessPoint™ Data, 2006).

**TABLE 2.1 – Study Area Land Use Characteristics**

Land Use	Acreage	Percent of Total
Residential	1,113	51.9%
Commercial	186	8.6%
Industrial	83	3.9%
Institutional	271	12.6%
Utility	7	0.3%
Unknown	132	6.2%
Right-of- Way/Other	354	16.5%
<b>TOTAL</b>	<b>2,146</b>	<b>100.0%</b>

SOURCE: City of Atlanta Tax Digest, 2005

The study area boundary contains nine complete census block groups, which provide the basis for most of the socio-demographic analysis in this study.<sup>2</sup>

## 2.4.2 – Study Population

As of 2000, more than 14,000 people lived in the study area (U.S. Census, 2000). As TABLE 2.2 shows, the study area population is predominantly white, largely of working age [18-64], with a per capita income of over \$47,000. Approximately 8.5 percent of the population lives below the poverty level and 11.3 percent of the housing units do not have a vehicle available. Approximately 19,000 people are projected to be living in the area by year 2030 (Atlanta Regional Commission, 2007a).

**TABLE 2.2 – Study Area and City of Atlanta Population Profile**

	Study Area	City of Atlanta
Total Population	14,414	416,474
White	12,481 (86.6%)	138,352 (33.2%)
Non-white	1,933 (13.4%)	278,122 (66.8%)
Aged 0-5	844 (5.9%)	26,666 (6.4%)
Aged 6-17	936 (6.5%)	66,338 (15.9%)
Aged 18-64	11,494 (79.7%)	282,935 (67.9%)
Aged 65+	1,140 (7.9%)	40,535 (9.7%)
Below Poverty Level	1,223 (8.5%)	95,743 (23.0%)
Rate of Carless Housing Units	11.3%	21.2%
Per Capita Income	\$47,108	\$25,772

SOURCE: U.S. Census Bureau, 2000 Census, SF1 and SF3

<sup>2</sup> Census block groups are 90.001, 90.002, 90.003, 91.001, 91.002, 91.004, 93.002, 93.003, and 95.004. When data was not available at the census block group level, area-weighted census tract level data was used to show the general characteristics of the area. Census Tracts 90 and 91 are both fully contained in the study area. The study area contains approximately 50 percent of tract 93, and approximately 15 percent of tract 95. Tract and block group definitions are from the 2000 U.S. Census.

A priority of the Hospitals and Community Health HIA was the assessment of potential health impacts upon the most vulnerable members of the study area population. For the purposes of this HIA, the potentially vulnerable populations have been defined as individuals in one or more of the following categories:

- Low economic status
- Children
- Older adults
- Renters
- Carless

The focus on these groups reflects research that has shown that underserved populations tend to be of lower economic status (Gordon-Larsen et al., 2006; Huston et al., 2003; Parks et al., 2003; Taylor et al., 2006; Wilson et al., 2004). Furthermore, the health of younger and older populations is often more sensitive to environmental conditions. Renters can also be particularly vulnerable in areas of intense redevelopment, where increases in property values can encourage landlords to sell properties, significantly raise rents, or convert apartments into condominiums. Much of the study area is in the BeltLine redevelopment area and will potentially be subject to pressures from other major redevelopment proposals (see Section 3.2.3), so development pressures could affect renters disproportionately in the area. Finally, lack of access to a motor vehicle, especially in an auto-oriented city like Atlanta, can create hardships by preventing reasonably convenient and safe access to necessary goods, services, and employment opportunities.

TABLE 2.3 shows the block group composition of vulnerable populations compared to the City of Atlanta. Two block groups—90.002 and 95.004—have higher proportions of population under 18 years of age than does the City of Atlanta. Four block groups—90.001, 90.002, 91.001 and 91.004—have higher proportions of population over 65 years of age. Six of the study area block groups—90.003, 91.001, 91.002, 91.004, 93.002, and 93.003—have a higher proportion of rental housing units than does the City of Atlanta. On the metrics of proportion of non-white population, population in poverty, and proportion of carless housing units, none of the block groups has a rate higher than that of the City of Atlanta. All of the study area block groups have a higher per capita income (PCI) than that of the City of Atlanta.

**TABLE 2.3 – Study Area and City of Atlanta Demographic Comparison (%)**

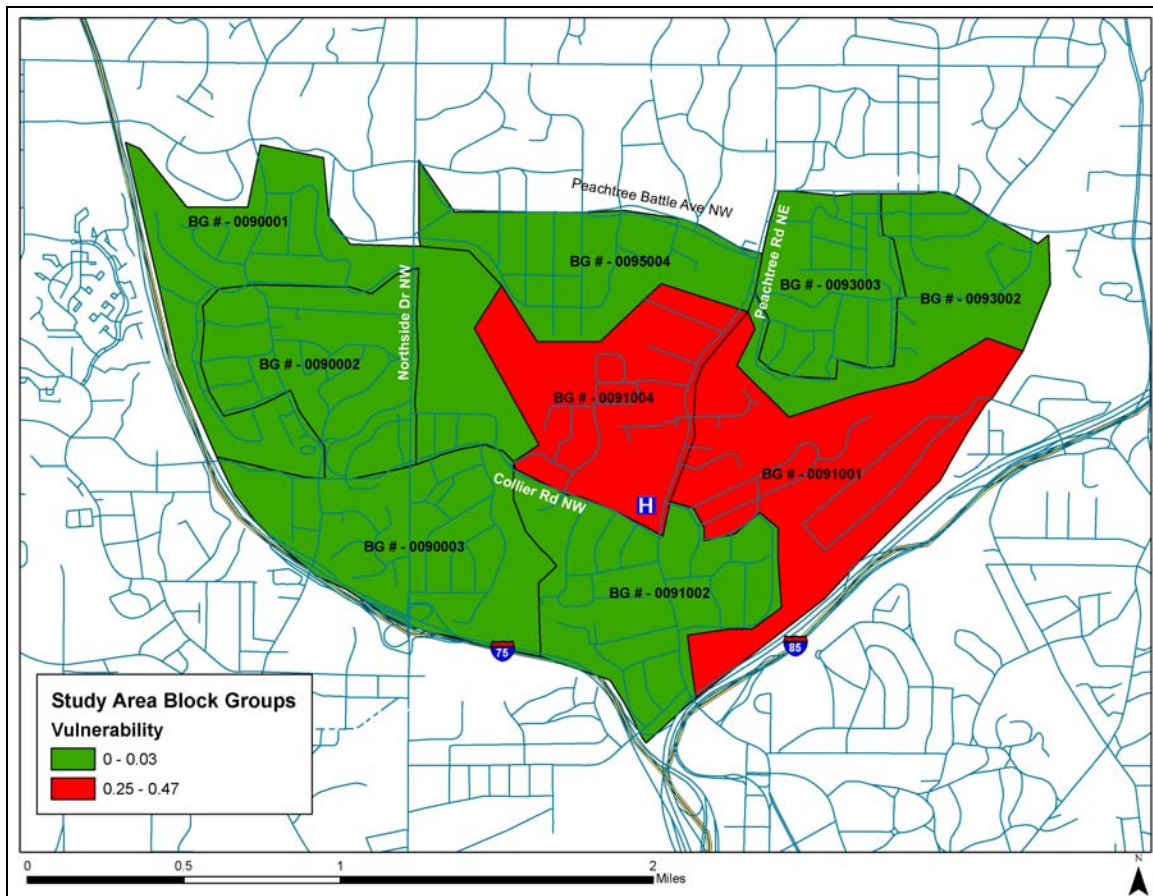
	Study Area Block Groups									City of Atlanta
	90.001	90.002	90.003	91.001	91.002	91.004	93.002	93.003	95.004	
Non-white Population	4.4%	0.7%	17.0%	23.7%	14.2%	18.5%	10.8%	7.4%	1.6%	66.8%
Population under 18	21.5%	23.9%	14.6%	10.4%	8.3%	8.5%	3.7%	9.6%	34.7%	22.3%
Population over 65	11.3%	10.1%	5.4%	9.8%	2.7%	11.7%	7.1%	7.4%	6.0%	9.7%
Population in Rental Housing Units	8.1%	8.2%	64.5%	77.1%	64.5%	59.7%	76.9%	59.4%	7.9%	56.3%
Population in Poverty	2.4%	4.7%	5.1%	9.2%	6.7%	21.1%	4.2%	8.9%	0.0%	23.0%
Population in Carless Households	3.5%	0.0%	3.6%	17.1%	8.9%	20.0%	14.6%	8.8%	4.4%	21.2%
Per Capita Income (PCI)	\$45,785	\$56,189	\$48,488	\$45,707	\$50,832	\$34,595	\$48,043	\$43,398	\$72,275	\$25,772

SOURCE: U.S. Census Bureau, 2000 Census, SF1 and SF3.



While the demographic data in TABLES 2.2 and 2.3 show that in relation to the City of Atlanta, the study area does not have relatively large numbers of vulnerable populations, there are some stark differences when comparing the nine block groups of the study area. For the HIA study area, block groups with the highest concentration of vulnerable populations were identified using six indicators: non-white population, population in poverty, population under 18 years old, population 65 or older, number of carless housing units, and number of rental housing units. Each of these indicators was converted to a percentage and then multiplied together.<sup>3</sup> This yields a vulnerability score of between 1 (most vulnerable) and 0 (least vulnerable). Two block groups—91.004 and 91.001—scored significantly higher than the rest of the study area block groups. In particular, block 91.004, which is the Piedmont Hospital block, has the lowest per capita income (\$34,505). FIGURE 2.2 shows the location of the study area block groups and sections of both of the most vulnerable block groups are adjacent to the Piedmont Hospital campus.

**FIGURE 2.2 – Most Vulnerable Populations in the Study Area (by block group)**



SOURCE: U.S. Census Bureau, 2000 Census, SF1 and SF3

<sup>3</sup> The results of the initial multiplication were then multiplied by 10,000 to make the results easier to analyze.

### 2.4.3 – Existing Health Conditions

To serve as a benchmark of existing health conditions for the HIA study and future research, the team utilized two data sources—mortality data and the Behavioral Risk Factor Surveillance System (BRFSS), to characterize the health status of the population currently living within the HIA study area. The purpose of this approach was to compare the health status of the populations living in the study area against the population of the City of Atlanta, Fulton County, the state of Georgia, and the nation to identify potential disparities. The results of this analysis follow.

#### Mortality data

The team identified the following conditions and causes of death as potentially influenced by the built environment and other factors related to Piedmont Hospital and the surrounding study area:

- Heart disease
- Malignant neoplasm (cancer)
- Cerebrovascular disease (stroke)
- Diabetes mellitus
- Homicide
- Motor vehicle accidents
- Suicide

Data on HIV, influenza, and pneumonia<sup>4</sup> were also included as reference points.

Mortality data at the state, county, and census tract level for the years 2000–2004 were obtained to determine the mean mortality rate for the 5-year period. Vital statistics data were accessed through OASIS, a standardized health data repository of the Georgia Department of Human Resources, Division of Public Health (Online Analytical Statistical Information System, 2008). Mortality rates (per 100,000 population) at the state and county level were obtained for each year and then averaged to obtain a mean mortality rate for the 5-year period.<sup>5</sup> The results are shown in TABLE 2.4.

As TABLE 2.4 shows, the mortality rates due to most factors were significantly lower for the study area than for the City of Atlanta and Fulton County. Mortality rates for HIV, homicide, influenza and pneumonia, and suicide were higher in the study area than in the State of Georgia or the United States. Mortality rates from motor vehicle accidents for the study area were less than for the city, county, state, and country overall. Study area mortality rates for heart disease, malignant neoplasm (cancer), cerebrovascular disease (stroke), and diabetes were lower than the city, county, state-wide, and national rates.

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<sup>4</sup> For mortality data, influenza and pneumonia are often analyzed as a single, combined category.

<sup>5</sup> The City of Atlanta is defined using the census tracts that closely resemble the official city boundaries. For the purposes of these health status analyses, data for the BeltLine HIA Northside study area were used as a proxy for the Piedmont HIA study area. Mortality rates for the City of Atlanta and the Hospitals and Community Health HIA study area were derived as follows:

(1) The number of deaths within each geographic area from each selected cause between 2000 and 2004 was obtained from OASIS. The mean number of deaths per year was determined by summing the yearly deaths and dividing the total deaths by 5 years.

(2) The population for the geographic areas was obtained from the 2000 Census and the Atlanta Regional Commission population estimates for the intercensal years. Because tract-level population data were not available for the years 2001 and 2002, we calculated the mean population size as follows: Mean population (2000–04) = [2 \* (year 2000 population) + 2 \* (year 2003 population) + year 2004 population] / 5

(3) Mean mortality rates were then calculated by dividing the mean number of deaths over 5 years by the mean population size.

**TABLE 2.4 – Crude Death Rate (per 100,000 population) from Selected Causes of Death**

Cause of Death	HIA Study Area, 2000–04	City of Atlanta, 2000–04	Fulton County, 2000–04	State of Georgia, 2000–04	United States, 2002*
Heart disease	159.1	206.5	174.1	203.3	241.7
Malignant neoplasms (cancer)	115.1	170.6	149.3	163.2	193.2
Cerebrovascular disease (stroke)	41.7	51.3	42.1	50.3	56.4
HIV	10.6	39.8	25.3	8.3	4.9
Homicide	10.6	23.0	16.4	7.9	6.1
Diabetes mellitus	11.7	23.8	17.1	18.4	25.4
Influenza and pneumonia	22.3	21.1	18.3	18.6	22.8
Motor vehicle accidents	6.5	11.8	11.5	16.8	15.7
Suicide	11.7	9.6	9.3	10.7	11.0
Asthma	**	2.5	1.9	1.4	1.5

SOURCES: Online Analytical Statistical Information System (OASIS), Division of Public Health, 2008; Calculations by Center for Quality Growth and Regional Development (CQGRD)

\* Kochanek KD, Murphy SL, Anderson RN, Scott C. Deaths: Final Data for 2002. National Vital Statistics Reports, 53(5), October 2004.

\*\* Number of deaths in the planning area was too small to be reported.

Mortality rates for the various demographic subgroups of the study area could not be derived because estimates of the population sizes for sex, race, and ethnicity subgroups of census tracts were not available for intercensal years. This is due to the fact that the City of Atlanta has experienced pockets of significant population change over the 2000–2004 time period, making the use of the proportions from the 2000 Census inappropriate for later years.

We could not compare study area, county, or state mortality rates with national mortality rates over the same time period because the National Center for Health Statistics does not conduct analyses of mean death rates over this five-year period; thus, we have compared rates within Georgia to the national mortality rates for 2002, the middle year of the time period. Importantly, reported rates are really crude mortality rates that have not been adjusted for age or for other demographic factors; therefore, differences in mortality rates across areas may be due in part to differing age distributions. For this reason, the project team did not assess statistical significance of these differences.

## 2.4.4 – Stakeholder Involvement

The scoping step of the HIA also included reaching out to residents within the study area and representatives of Piedmont Hospital to inform them about the HIA and to invite them to identify potential health impacts for assessment. See Appendix A.3 for letters, announcements, and other materials developed to encourage stakeholder involvement.

### Resident Involvement

Resident involvement in the HIA has been facilitated by the Brookwood Alliance, an organization formed in 2007. It is an umbrella organization that includes Brookwood Hills Community Club, Inc.; Brookwood Civic Association, Inc.; Ardmore Park Neighborhood Association, Inc.; Collier Hills Community Organization, Inc.; Loring Heights Civic Association; and Collier Hills North Civic Association. The Alliance was formed to participate in the Peachtree Corridor Task Force and continues to work together to respond to shared needs and challenges.



In the fall of 2007, soon after the Brookwood Alliance officially formed, study team members met with their leadership to share information about the HIA and invite their participation. In December 2007, we began giving presentations at neighborhood meetings and, in January 2008, a survey was made available in electronic and hard-copy formats (results of the survey are described in Section 2.5 and a complete survey is found in Appendix A.3.6). During the months of March and April outreach and presentations to neighborhoods continued.

On April 20, 2008, the Ardmore Park Neighborhood Association held a meeting and invited residents of the other Brookwood Alliance neighborhoods to attend. At this meeting, we presented preliminary findings from the HIA and invited attendees to provide additional input regarding health impacts related to living near Piedmont Hospital. Using maps showing the roads and major institutions within the study area, attendees were asked to identify specific problem areas related to intersections, fast moving traffic, crime, and sidewalk conditions. The results of these exercises are analyzed in Section 4.

Early scoping identified key health impacts related to automobile traffic, access, and connectivity. Stakeholder involvement verified concerns about these issues and also identified noise as an additional issue.

In June 2008, the final report and recommendations from the HIA were submitted to the Robert Wood Johnson Foundation. TABLE 2.5 lists the key outreach activities designed to involve resident stakeholders.

**TABLE 2.5 – Outreach to Study Area Residents**

September 21, 2007	Meeting with neighborhood representatives, including persons employed by Piedmont Hospital
October 12, 2007	Conference call with neighborhood representatives
December 11, 2007	Presentation to Brookwood Alliance Board
January 24, 2008	Survey open (distributed electronically and in hard-copy)
January 26, 2008	Presentation to Brookwood Hills Neighborhood Association
March 2008	Additional neighborhood outreach to encourage survey participation
April 2008	Web pages established to share information and recommendations from HIA
April 20, 2008	Presentation to Ardmore Park Neighborhood Association
April 25, 2008	Meeting with representatives of condominium residents
May 2008	Survey closed
June 2008	Meetings scheduled for July with neighborhood association and elected officials

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

## Hospital Involvement

In late 2007, Dr. Catherine Ross met with the Vice President of Governmental and External Affairs at Piedmont Hospital to discuss the Hospital's role in the community. On January 24, 2008, Ross sent letters to the CEO of Piedmont Hospital and other hospital representatives informing them of the HIA study and inviting them to participate. The hospital was singularly unresponsive to these solicitations. A number of other unsuccessful attempts were made via telephone calls and additional letters to encourage representatives of Piedmont Hospital to participate in the HIA process.

## 2.5 – Survey of Stakeholders

In order to determine those issues of greatest concern to stakeholders in the study area, the team conducted a survey of stakeholders who live, work, and/or go to school near Piedmont Hospital. The purpose of the survey was to identify positive and negative health impacts associated with major institutions, including Piedmont Hospital, in the study area. The survey consisted of 31 questions, both open- and closed-ended, to gauge respondents' opinions on the current state of health and the built environment and on the perceived potential health effects of Piedmont Hospital. A copy of the survey is included in Appendix A.3.6.

The survey was administered online and paper copies of the survey were distributed via the neighborhood associations. There were 160 responses to the survey. The average years of residence of respondents in their current housing was 12 years. This is long enough to allow residents to identify problems and safety concerns, as well as impacts of the hospital and of increased development on their neighborhoods.

### 2.5.1 – Definition of Health

The survey begins with an open-ended question asking the respondent to define good health in order to determine how stakeholders perceive the concept of good health. As mentioned earlier, it is important to clearly define health before assessing the impacts of Piedmont Hospital on health because the impacts that residents perceive may be different depending on their own definitions of health. Open-ended answers were organized across five categories: absence of disease; “a state of complete physical, social, and mental well-being”, defined by the 1946 World Health Organization Constitution; “an ability to identify and to realize aspirations, to satisfy needs, and to change or cope with the environments”, defined by the 1986 Ottawa Charter for Health Promotion; good natural and built environments, and others.

As seen in TABLE 2.6, the traditional definition of health as the absence of disease was not the most prevalent (26.6 percent). In fact, more than half of respondents (53 percent) regard good health as an ability to be physically, socially, and mentally active. Eight percent of responses are categorized into the definition as an ability “to identify and to realize aspirations, to satisfy needs, and to change or cope with the environments”. While the fourth category is partly related to the third definition in that the third one also incorporates the environment, 9 percent of respondents specifically mention that good natural and built environments represent a state of good health. This reinforces the notion that the definition of good health should incorporate satisfaction with natural and built environments, as well as a good state of biological health.

**TABLE 2.6 – Definition of Good Health by Stakeholders**

Definition of good health	Ratio (%)
Absence of disease	26.6
A state of complete physical, social, and mental well-being	52.5
Ability to identify and to realize aspirations, to satisfy needs, and to change or cope with the environments	7.9
Good natural and built environment	9.0
Others	4.0
Total	100.0

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

## 2.5.2 – Satisfaction with Neighborhood

Satisfaction with the neighborhood is a useful criterion to assess health impacts, particularly where an anchor institution, such as Piedmont Hospital, is located within the neighborhood. The hospital clearly has both direct and indirect effects on the quality of the daily lives of residents.

Overall, most respondents (91 percent) say that they are satisfied with their neighborhood. Specifically, 38 percent of respondents support strong satisfaction with their neighborhood (see Appendix A.3.6). Respondents also mention that improvements to the traffic conditions and physical environments of neighborhood would increase their satisfaction with their neighborhood. For example, TABLE 2.7 shows that approximately 54 percent of respondents indicate that traffic conditions, as well as walking and biking environments, need to be improved. They also indicate that transportation issues, including traffic congestion, walking and biking conditions, and parking problems, are closely related to the impacts of Piedmont Hospital. This will be discussed more in Section 2.5.4.

**TABLE 2.7 – Factors Increasing Satisfaction with Neighborhood**

<b>Factors that increase satisfaction with neighborhood</b>	<b>Ratio (%)</b>
Improvement of traffic conditions including congestion	31.9
Improvement of walking and Biking conditions including improvement of sidewalks and trails	22.2
Safety from crime and traffic	13.0
Parking availability near home	8.7
Parks and playground near home	6.3
Reducing noise from traffic and hospital emergency vehicle	4.3
Less construction (e.g. high-rise condo) and growth	4.3
Retailers (including grocery, restaurant, and shops) within walking distance	2.9
Public transit	2.9
Others	3.4
Total	100.0

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

Factors that increase neighborhood satisfaction also affect residents' health (see TABLE 2.8). Respondents think having safe access to places, such as parks, trails, and recreation centers, and being safe from crime and injury are strongly associated with positive impacts on health. Thus, attention should be focused on making improvements to barriers to accessing amenities like parks and trails. As can be seen in TABLE 2.8, residents cite being safe from crime and injury within the neighborhood as a positive impact on health. Lastly, having safe places to cross major thoroughfares and streets within neighborhoods is also seen as having a positive health outcome.

**TABLE 2.8 – Impact of Conditions on Residents’ Health (%)**

	Positive		Neutral			Negative	
Having access to places (parks, trails, recreation centers, sidewalks) within my neighborhood to be physically active	<b>82.6</b>	11.6	1.3	4.5	-	-	-
Being safe from crime within my neighborhood	<b>74.4</b>	14.7	9.6	1.3	-	-	-
Being safe from injury within my neighborhood	<b>62.6</b>	26.5	6.5	3.9	0.6	-	-
Having safe places to cross major thoroughfares within my neighborhood	<b>50.0</b>	25.0	14.7	3.2	1.3	4.5	1.3
Having convenient access to grocery stores within my neighborhood	<b>36.5</b>	31.4	17.9	12.8	-	0.6	0.6
Having convenient access to job and educational opportunities within my neighborhood	<b>29.0</b>	27.1	18.7	21.9	0.6	0.6	1.9
Having convenient access to public transportation	25.8	<b>27.1</b>	14.8	<b>27.1</b>	2.6	1.3	1.3

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

### 2.5.3 – Walking and Biking Environments

A good environment for walking and biking is not only one of most important factors that increase residents’ satisfaction with neighborhood, but also an important condition for residents’ health. However, although many facilities, such as groceries, other retail stores, restaurants, parks, and playgrounds are within walking or biking distance, people seldom walk or bike to get there partly because of inconvenience and the barriers of physical environments. As seen from TABLE 2.9, about 93 percent of respondents mention that they can walk or bike to those facilities, slightly more than half of them do so only a few times a year or never except when they go to parks and playgrounds.

TABLE 2.10 indicates that an opportunity for walking and biking can be increased by improving the physical environments of the neighborhood. For example, the improvement of sidewalk and sidewalk environments is one of the most significant factors of walking and biking to grocery (43 percent), restaurants/cafes (42 percent), and park/playground (44 percent). The next most important factor is traffic conditions, which was also the most important factor that affects satisfaction with the neighborhood.

**TABLE 2.9 – Walking and Biking Frequencies to Facilities (%)**

		Grocery	Other Stores	Restaurant/Cafe	Park/Playground
Possibility	Yes	92.9	92.9	96.1	89.6
	No	7.1	7.1	3.9	10.4
Frequency	Several times a week	5.5	9.6	7.3	31.2
	At least once a month	23.4	33.6	34.7	<b>32.6</b>
	A few times a year	32.4	<b>39.0</b>	<b>39.3</b>	24.8
	Never	<b>38.6</b>	17.8	18.7	11.3

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

**TABLE 2.10 – Factors That Can Increase Frequencies of Walking/Biking to Facilities (%)**

	Grocery	Other Stores	Restaurant/Cafe	Park/Playground
Sidewalks/sidewalk environments	<b>43.4</b>	<b>49.3</b>	<b>41.7</b>	<b>43.9</b>
Better street lighting	16.8	23.2	18.1	20.6
Bike lanes	21.7	21.7	18.7	15.9
Multi use trail	18.9	21.0	16.5	24.3
Traffic calming	<b>36.4</b>	<b>50.0</b>	<b>34.5</b>	30.8
Shorter distance	28.7	17.4	20.9	20.6
A different facility	23.8	10.1	30.2	13.1
Other	30.1	26.8	25.9	<b>32.7</b>

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

### 2.5.4 – Health Impacts and Piedmont Hospital

The survey results find that of the respondents, over 83 percent believe that having convenient access to health care within their neighborhoods will have a positive effect on their health, implying that residents have a positive image of a health care facility in or near their neighborhood. This is true regardless of the distance between their neighborhoods and Piedmont Hospital (see TABLE 2.11).

Compared to this response, however, only 38 percent think that living near Piedmont Hospital has a positive effect on their health; 27 percent, both positive and negative effects on their health; and 7 percent, negative effects on their health. The survey shows that a smaller percentage of respondents in the two closest neighborhoods to the hospital tended not to think that proximity to Piedmont Hospital had a positive effect on their health (see TABLE 2.12). This implies that residents in these neighborhoods may be more concerned about the negative externalities of the physical environment of the hospital within their neighborhood than the hospital itself.

For example, residents who live in block groups adjacent to Piedmont Hospital mention severe traffic congestion, on-street parking by hospital employees and patients in their neighborhoods, unsafe crosswalks, lack of greenspace, expansion of buildings without improvements of infrastructure, and noise generated by various transportation modes accessing the hospital such as helicopters, ambulances, individual automobiles, and delivery trucks late at night. Those who identified potential positive health impacts cited the closeness to an emergency room, the ability to walk to the hospital, and services provided by the hospital, such as the health club.

In particular, traffic congestion and safety are critical in these neighborhoods because many residents responded that they walk (63 percent), jog (34 percent), and bicycle (12 percent) within their neighborhoods to exercise. More than 65 percent mentioned that automobile traffic within their neighborhoods is heavier than in other neighborhoods with which they are familiar. Those who identified unsafe factors within their neighborhoods attribute them to fast automobile traffic (70 percent), poor sidewalk conditions (59 percent), crime rates (53 percent), difficulty to cross intersections (47 percent), and congested roads (41 percent).

**TABLE 2.11 – Impact of Living near a General Health Care Facility on Residents' Health (%)**

Neighborhood	Distance <sup>6</sup>	Positive		No effect			Negative		No response	Total
		1	2	3	4	5	6	7		
Ardmore	0.22	45.5	24.2	18.2	12.1	-	-	-	-	100
Collier Hills North	0.30	29.4	29.4	17.7	17.7	-	-	-	5.9	100
Brookwood Hills	0.39	30.6	38.9	16.7	8.3	2.8	2.8	-	-	100
Collier Hills	0.59	46.2	15.4	15.4	15.4	-	-	-	7.7	100
Brookwood	0.65	50.0	22.2	5.6	22.2	-	-	-	-	100
Loring Heights	0.75	32.3	32.3	16.1	16.1	-	3.2	-	-	100
Average		83.3			14.7	1.9		0.1		100

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

**TABLE 2.12 – Impact of Living near Piedmont Hospital on Residents' Health (%)**

Neighborhood	Distance	Positive effect	No effect	Negative effect	Both positive and negative effects	Don't know	No response	Total
Ardmore	0.22	9.1	27.3	15.2	45.5	3.0	-	100
Collier Hills North	0.30	29.4	17.7	11.8	35.3	5.9	5.9	100
Brookwood Hills	0.39	52.8	8.3	-	33.3	5.6	2.8	100
Collier Hills	0.59	38.5	15.4	23.1	23.1	-	-	100
Brookwood	0.65	55.6	33.3	-	11.1	-	-	100
Loring Heights	0.75	41.9	32.3	6.5	3.2	16.1	3.2	100
Average		37.1	22.6	7.5	26.4	3.8	2.5	100

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

While the survey respondents are not fully representative of the population mix of the HIA study area, the survey results do provide an additional avenue through which public perception of the potential health effects of the hospital can be measured and integrated into the overall HIA. The survey questionnaire results can be found in Appendix A.3.6.

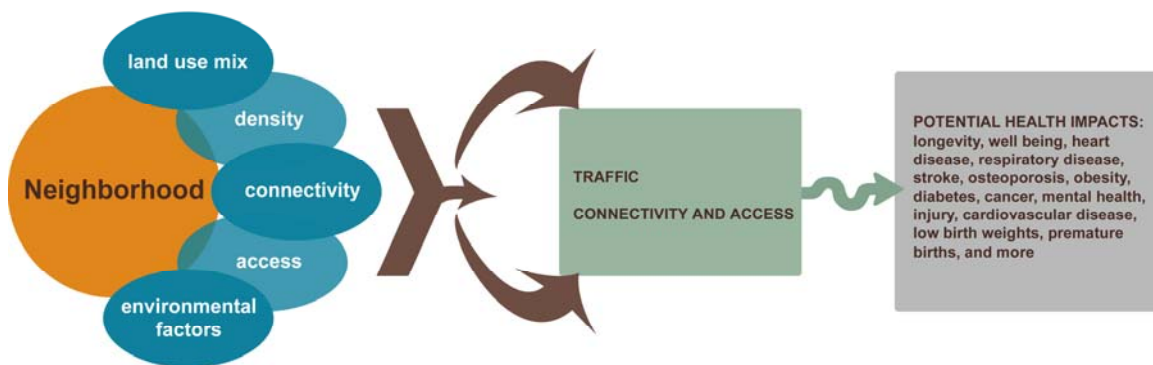
## 2.6 – Identification of Health Impacts

As mentioned earlier, the built environment, including the existence of anchor institutions such as Piedmont Hospital, has both positive and negative health impacts. To simplify the array of potential health impacts for this report, they are broken down into two basic categories: **(1) Traffic** and **(2) Connectivity and Access**. The impacts thus categorized are described in greater detail in Section 4; what follows is a brief summary.

The health impacts of traffic conditions are accessed in terms of the impacts traffic has on physical activity, safety, air quality, stress, noise, and social capital. In terms of connectivity and access, the HIA team explored the effects that connectivity (in both design and urban form) and access to destinations such as parks, trails, transit, restaurants, and stores have on residents' physical activity, social capital, and opportunity (see FIGURE 2.3). The team also assessed the access to jobs, health care, health information, and housing and their impacts on the health of the community.

<sup>6</sup> Distances from Piedmont Hospital to each neighborhood are measured using the centroids of the Piedmont Hospital block and each neighborhood.

**FIGURE 2.3 – The Relationship between the Built Environment and Health**



SOURCE: Center for Quality Growth and Regional Development (CQGRD)

The team used a multifaceted approach to identify these key issues and conditions that are evident in the HIA study area with the potential to impact public health. The purpose of this approach is to ascertain: (1) those issues that concern the public most and (2) those issues that will have the greatest impact, based on either the severity of impacts or the number of people affected. This approach involves a full literature review, which can be found in Appendix A.2.



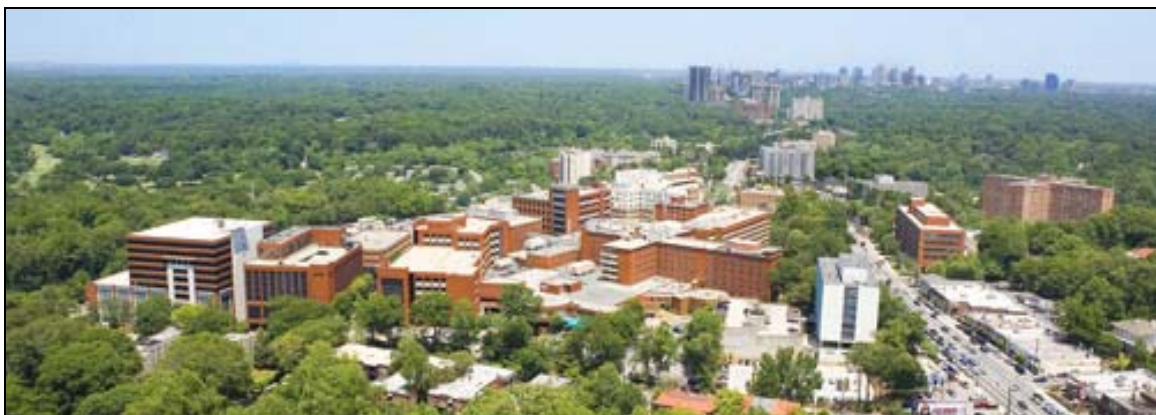
# Section 3:

## Overarching Issues

For years, public health experts have identified housing, and for that matter neighborhoods, as one of the main influences on human health. A neighborhood not only serves as the place where we spend a large portion of our day, but provides a context in which we pursue our lives. It can determine where we shop, go to school, play, and work. Where we live can influence the access we have to healthy foods, health care, and other important services and the opportunities we have to be an active part of a community. Thus it follows that neighborhoods have a significant impact on our health.

Piedmont Hospital is an ideal case study to examine how an anchor institution can impact surrounding neighborhoods. It is set in a largely residential neighborhood, but also adjacent to Atlanta's signature corridor, Peachtree Road. There are many major planning efforts underway in the community, most notably the Atlanta BeltLine, an ambitious transit and greenway project that will be accompanied by significant public and private investment. These projects aim to transform both the area's physical landscape and the way in which it functions, making Piedmont Hospital's role critical to the well-being of neighborhood residents. It is useful to review current and future development in the study area to fully assess potential health impacts.

**FIGURE 3.1 – Aerial Photograph of Piedmont Hospital**



SOURCE: The Brookwood Website



## 3.1 – Anchor Institutions

Anchor institutions are the universities, museums, hospitals, libraries, parks, performing arts centers, and sports arenas that help construct a city's distinctive identity and vibrancy. These institutions are sources of civic pride and play a central role in the community. Equally important, their location-based real estate holdings and clientele help anchor these institutions in place, making them mainstays in communities, a role that increasingly footloose corporations can no longer be expected to play (Penn Institute for Urban Research, nd).

In addition, a community's economic well-being is becoming increasingly tied to anchor institutions, especially universities and medical centers, known together as “eds and meds” (Gurwitt, 2008). In many places, these institutions have surpassed traditional manufacturing corporations to become their region's leading employers (Maurrasse, 2007). They are purchasers of goods and services and they often direct land development, which influences surrounding land values.

Anchor institutions also influence the surrounding community in less direct ways. Like anchor stores in shopping malls, anchor institutions often create positive externalities for nearby businesses, which benefit from the traffic generated by the anchor (Konishi and Sandfort, 2002; Pashigan and Gould, 1998; Nicholls et al., 2002). Finn and Louviere (1996) found that anchor stores have a strong impact on the image customers have of particular shopping centers. Likewise, one's perception of an entire community may be most influenced by one's perception of that community's predominant anchor institution.

Cities are beginning to take notice of the advantages in partnering with and investing in institutions so closely tied to the community and in no danger of one day leaving. Likewise, many anchor institutions have recognized they are important players in the revival of a city, and are leveraging their resources to aggressively shape their communities (Maurrasse, 2007; Gurwitt, 2008; Community-wealth.org, nd).

### 3.1.1 – Hospitals as Anchor Institutions

Along with universities, hospitals represent the largest and most numerous nonprofit anchors (Community-wealth.org, nd). As such, a hospital's influence extends beyond its own doors to the neighborhoods, cities, and regions with which it is inextricably connected. Both its daily operations and decisions for the future substantially impact not just the hospital's patients and employees, but the community at large.

#### Positive Impacts of Urban Hospitals

A hospital's provision of quality health care contributes to the fundamental well-being of a community. Community residents rely on hospitals to bring life into the world, care for the aged, ensure safety when a disaster occurs, educate people about the impact of lifestyles on their health, and provide comfort at the end of life, in addition to meeting basic health care needs (St. Peter's Hospital, 2006). Hospitals provide these benefits to the community 24 hours a day and seven days a week, offering a level of access unique among the anchor institutions.

Hospitals are also key cogs in the local economic system, serving as major employment centers that offer job opportunities spanning a broad range of skill levels. Their sizeable payroll expenditures initiate a ripple effect through the economy, as employees spend their paychecks on groceries, mortgages, rents, transportation, and entertainment. And though nonprofit hospitals are tax-exempt, its employees are not. Local governments, therefore, can take advantage of much-needed revenue because of hospitals' employment capacity. Additionally, hospitals

generate millions of dollars for the local economy by purchasing an array of goods and services, as well as by their capital spending.

Furthermore, hospitals can provide a number of benefits to its immediate neighbors. A hospital is recognized by neighborhood residents as a zone of safety, giving refuge, food, shelter, and information in times of distress (St. Peter's Hospital, 2006). Many hospitals also engage their communities with civic and cultural programs, as well as free health clinics and screenings. Others, recognizing the importance of partnering with community residents, have even offered complimentary meeting spaces to neighborhood groups and representation on decision-making boards (Swider, 2006). Additionally, a number of inner-city hospitals have initiated programs that rehabilitate nearby housing and help local residents buy homes (Pallarito, 1992).

### **Negative Impacts of Urban Hospitals**

Hospitals, however, may also in some ways negatively impact the quality of life of nearby residents. Hospitals generate high levels of traffic that not only congest neighborhood streets, but also potentially create dangerous scenarios for pedestrians and families with children. The constant hum of traffic, coupled with sounds of shrieking ambulance sirens, construction projects, and even helicopters, can also make for noisy neighborhoods near hospitals. These conditions can drive away some residents, which can lead to lower property values and neighborhood instability (Beecher, 2007).

Additionally, hospitals have at times played a more direct role in neighborhood decline. For hospitals operating in an urban context, expansion often involves acquiring and developing the properties of nearby homeowners. This process can quickly destabilize local neighborhoods by pressuring property owners to sell and by making living conditions difficult for those unwilling to leave their homes (Beecher, 2007; Bailey, 2007).

Hospital closings, too, pose problems for community members in need of access to quality health care. Hospitals located in minority neighborhoods, as well as hospitals more dependent on Medicaid patients, are less likely to survive than hospitals located in areas with low minority populations (Robert Wood Johnson Foundation, 2001). Researchers worry that such hospital closings may have damaged health care access, disproportionately affected minority groups, and increased the cost of health care (Robert Wood Johnson Foundation, 2001).

## **3.2 – Existing Development**

### **3.2.1 – Existing Conditions**

According to a report by the Peachtree Corridor Partnership Task Force (2007a),

Stretched between the Buckhead and Midtown CIDs, and populated with low-density auto-oriented commercial and small office buildings, the Brookwood Segment [of Peachtree Road] is in a sense characterized by its lack of character; it is a fragment of the mid-twentieth-century suburban expansion of Atlanta that has been replaced in other parts of the Corridor by intense and visually-stimulating urban development" (Peachtree Corridor Partnership, 2007a).

This description of the commercial segment of the Peachtree Corridor contrasts with the strong residential uses of the surrounding residential neighborhoods—the two contrasting types of uses that dominate the HIA study area.

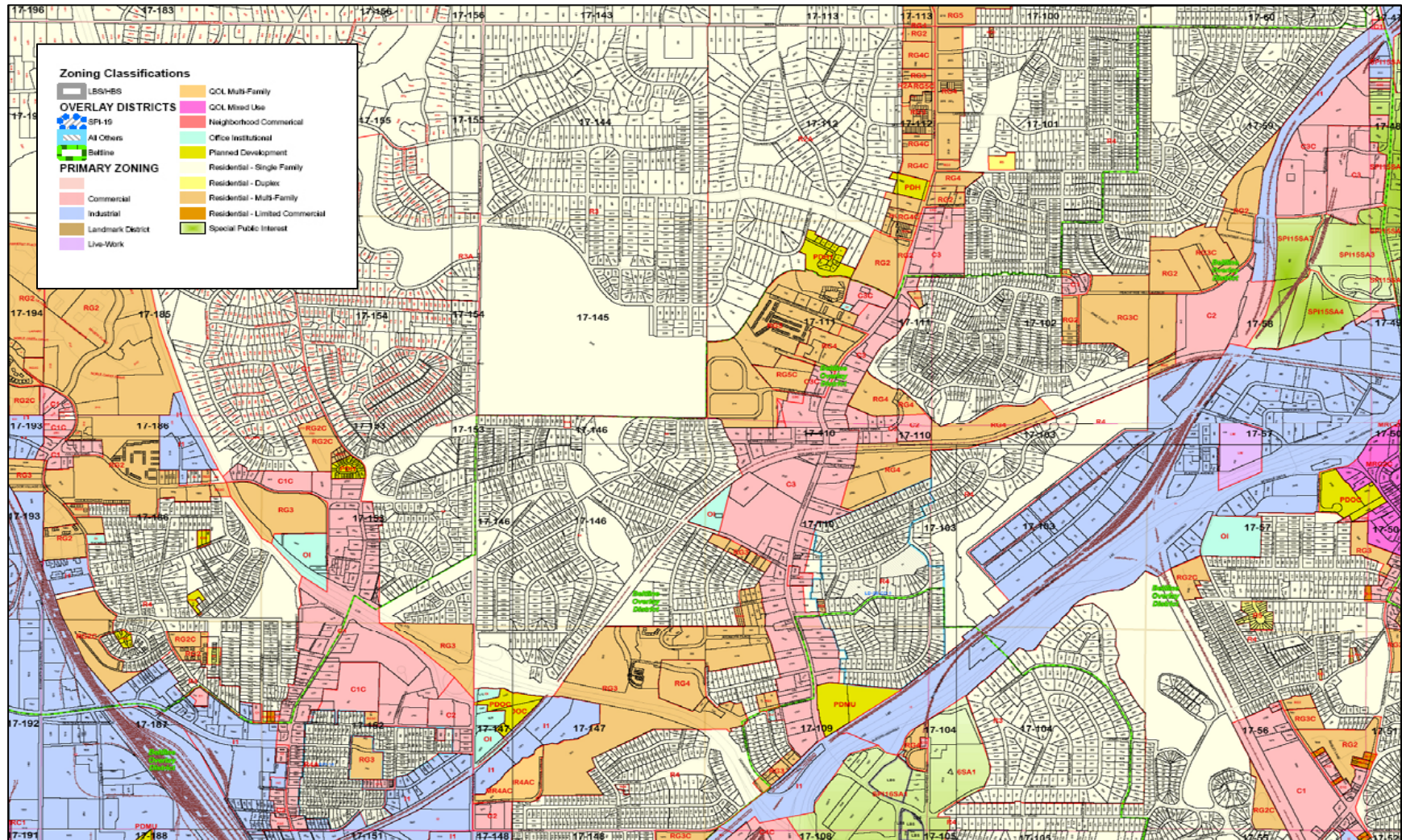
## Land Use

The Brookwood Segment of the Peachtree Corridor is dominated by low-density commercial uses that are gradually being replaced by medium- and high-density residential projects with ground-floor retail space. The exception to this pattern is the regional healthcare anchor institution Piedmont Hospital and the adjoining Shepherd Center and medical office buildings located at the intersection of Peachtree Road and Collier Road. Low- and high-density office buildings, dating from the 1950s to the 1980s, dominate Peachtree Road nearing the Midtown area (Peachtree Corridor Partnership, 2007a). The development along Peachtree Road shifts abruptly from commercial frontage to single-family residential neighborhoods (see FIGURE 3.2). The surrounding neighborhoods are dominated by single-family residential units yet multi-family serves as a buffer between the commercial uses along Peachtree Road and the single-family residences in the core of the neighborhoods. Multi-family units also characterize the southernmost residential area located along I-75.

The typical assumed right-of-way for the Peachtree Corridor through the Brookwood Segment extends from the centerline of the roadway to the back edge of the sidewalk. The typical total width is assumed to be 80 feet, with commercial and residential uses setback an additional 20–30 feet from this edge (Peachtree Corridor Partnership, 2007a). A large electric utility substation and high-tension lines emerge from the urban context, further emphasizing the industrial character of the Bennett Street warehouse area.



FIGURE 3.2 – Study Area Zoning Classifications



SOURCE: City of Atlanta Department of Planning and Community Development

### Greenspace

Tanyard Creek, a tributary of Peachtree Creek, is located in the Collier Hills Neighborhood along Collier Road. It is bordered to the north by Bobby Jones Golf Course, and by the neighborhoods Collier Hills North (east) and Ardmore Park (south), and includes an open field used for ballgames, dog-walking, and other passive uses (Barrella, 2008). Bobby Jones Golf Course is located within the single-family neighborhoods to the west of Peachtree Road. It was built in 1932 and is located on the land of the Battle of Peachtree Creek, a pivotal Civil War battle. Peachtree Battle Creek meanders through the golf course (Bobby Jones Golf Course, nd). Other smaller “pocket parks” are scattered throughout the neighborhoods and are further described in Section 4.2.

**FIGURE 3.3 – Meadow Near Tanyard Creek**



SOURCE: Friends of Tanyard Creek

**FIGURE 3.4 – Bobby Jones Golf Course**



SOURCE: Bobby Jones Golf Course, American Golf

### Style

Modernist architecture buildings, such as the new condominium development Mezzo (see Section 3.3), are starting to replace the authentic early-modern architecture of existing buildings along Peachtree Road. New development is characterized by modern elements such as mirrored façades and lack of classical ornamentation. Older buildings in the area are characterized by mid-century modern architecture, such as the Sheffield Medical Building, the 1776 Building, and the Darlington apartment tower.

Residential units in the area consist of mostly mid-century, single-family detached houses, transitioning to several condominium and apartment buildings approaching Collier Road and Peachtree Road. Some of these homes have been converted to apartments. The homes in the densely canopied Ardmore Park neighborhood south of Collier Road typically rest on large, well-maintained lots. Meanwhile, smaller homes and lots, with less tree cover, characterize the Collier Hills neighborhood to the north, where several homes are under renovation.





## **Parking**

Issues with parking along the Peachtree Corridor in the Brookwood Segment stem from concerns about convenience, as opposed to supply. The majority of the parking in the area is provided by privately owned and operated surface parking lots. Although some parking lots are still located at the front of the lot along Peachtree Road, certain retail centers, such as Brookwood Place, and restaurants, such as Ted's Montana Grill, Uncle Julio's Casa Grande, and Chick-fil-A, have located their parking lots at the rear of the property, creating a continuous street façade of buildings instead of open parking lots.

The majority of the single-family residential units have driveways and on-site parking. In order to accommodate neighborhood residents, nearly all residential streets prohibit on-street parking during daytime hours. On the other hand, the majority of older multi-family units within the neighborhoods do not have on-site parking and residents are forced to park along the curb. To comply with zoning and building codes, newer multi-family units have been required to construct an adequate number of parking spaces.

## **Issues and Opportunities**

### **Stakeholder Issues**

Identified in the Peachtree Corridor Task Force Planning and Design and Mobility Subcommittees Final Report, the principal stakeholder issues “revolve around Piedmont Hospital and the severe traffic levels it generates at the intersection of Peachtree Road and Collier Road” (Peachtree Corridor Partnership, 2007a). Additional development in the area is slated for completion in the near future and will potentially increase traffic around the already congested intersection.

Stakeholders also want to preserve the residential character of the Brookwood Segment and envision “a walk-able village with quality low- to mid-rise development and pedestrian-oriented streetscapes with a variety of public green space that will foster a distinctive, attractive community with a strong sense of place” (Peachtree Corridor Partnership, 2007a).

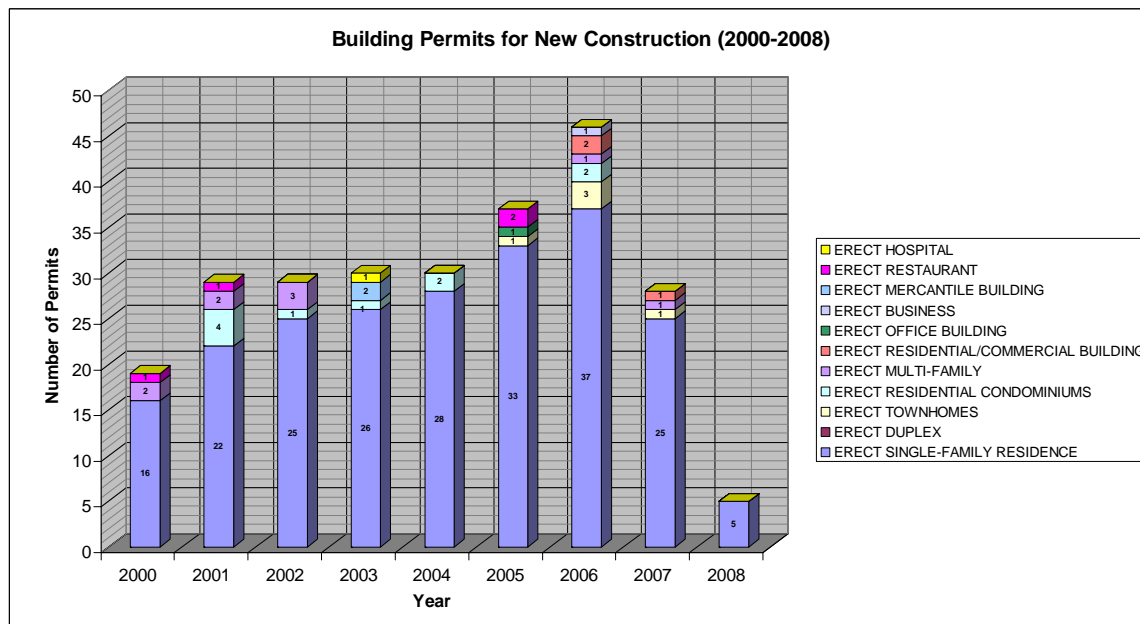
### **Zoning**

The Brookwood Segment of the Peachtree Corridor is zoned C-3 and is reflected in its highly commercialized character. Excluding Piedmont Hospital in the center, various scaled strip retail centers flank Peachtree Road to the north and the south of the hospital. Given the C-3 zoning, these parcels have the potential to be redeveloped at a higher density to reflect the maximum allowed density of the zoning use.

## **3.2.2 – Building Permits (2000–2008)**

Since 2000, the study area experienced an increase in the number of building permits for new construction. There were 19 permits for new construction in 2000, rising to around 30 permits per year from 2001 to 2004. The number of new construction permits increased again in 2005, and then peaked in 2006 with 46 building permits for new construction. In 2007, new construction permits decreased by almost 50 percent; as of May 20, 2008, there have been only five new construction permits issued.

**FIGURE 3.6 – Building Permits for New Construction in the Study Area (2000-2008)**



SOURCES: Data by City of Atlanta Department of Planning and Community Development; Calculations by Center for Quality Growth and Regional Development (CQGRD).

## Single-Family Building Permits

Single-family building permits compose the largest amount of new construction building permits in the study area between 2000 and 2008. As with the total number of permits, single-family residence building permits increased from 2000 to 2006, reaching a total of 37 permits issued in 2006. This number dropped slightly in 2007, and thus far, there have only been 5 single-family residence building permits issued in 2008, composing all of the new construction building permits for this year. These new residences fit into the existing composition of the neighborhood surrounding Piedmont Hospital.






## Multi-Family Building Permits

Since 2000, there have been six multi-family units constructed in the Hospital study area, adding almost 1,400 units to the area (see TABLE 3.1).

The increase in the number of multi-family units in an area can greatly increase the number of residents in an area, and thereby potentially increase pedestrian and traffic congestion. Multi-family units also tend to be more densely developed than traditional single-family neighborhoods, often causing disagreements between the different types of lifestyles associated with each type of development. The increase in the number of multi-family units in the area surrounding Piedmont Hospital has raised disagreements among community stakeholders about parking and increased traffic congestion.



**TABLE 3.1 – Multi-Family Building Permits for New Construction (2000-2008)**

	Year	Address	Name	Units
	2000	2626 Peachtree Road NW Atlanta, Georgia 30305	The Peachtree Residences (Condominiums for Purchase)	121 Units
	2001	149 26th Street NW Atlanta, Georgia 30309	Camden Brookwood (Apartments for Lease)	359 Units
	2002	200 26th Street NW Atlanta, Georgia 30309	City Park Townhomes (Townhomes for Purchase)	143 Units
	2002	1150 Collier Road Atlanta, Georgia 30318	Collier Green (Condominiums for Purchase)	264 Units
	2006	40 Peachtree Valley Road NE Atlanta, Georgia 30309	Westchester at Peachtree Valley (Apartments for Lease)	400 Units
	2007	2020 Peachtree Road NE Atlanta, Georgia 30309	Irene and George Woodruff Family Residence Center (Temporary Housing)	84 Units

SOURCES: The Peachtree Residences; Camden Apartments; City Park Townhomes; Collier Green; Archstone Apartments; and the Shepherd Center.

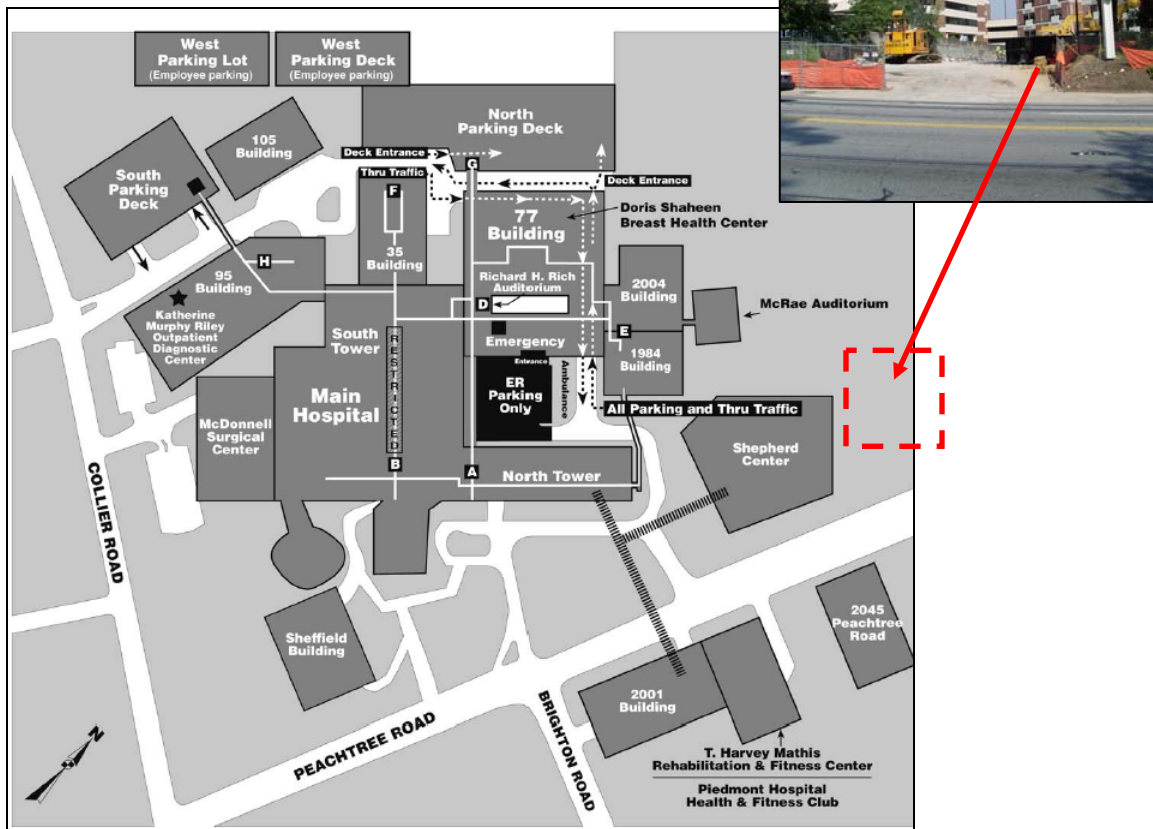
## Commercial Building Permits

Between 2000 and 2008, there were few commercial building permits issued. There were fewer than five permits issued for the construction of each of the following: office building (1), business (1), mercantile building (2), restaurant (4), and commercial structures (3). However, there were four permits for the construction of parking lots and parking decks, suggesting an increase in the development of other types of land uses besides commercial.

## Hospital Building Permits

Since 2000, there has been continuous change to the Piedmont Hospital complex. Between 2000 and 2008, there has been one permit to “erect hospital” (2003), one permit to “erect hospital- supplement” (2006), 10 permits to “add to hospital,” and over 40 permits to “alter hospital.” This permit information does not take into consideration the parking infrastructure needed to support this type of development and the construction of those parking lots or decks.

FIGURE 3.7 – Piedmont Hospital Campus Map



SOURCES: Map by Piedmont Hospital; Photo by Center for Quality Growth and Regional Development (CQGRD)

\* Irene and George Woodruff Residence Center identified by red box.

In addition to the continuous building additions and renovations of Piedmont Hospital’s healthcare facilities, the Shepherd Center is currently constructing the Irene and George Woodruff Family Residence Center, a \$16 million residential center adjacent to the hospital (Shepherd Center) (see FIGURE 3.7). In over 87,000 square feet, the new facility will have 84 wheelchair-accessible suites, each including a living room, kitchenette, bathroom, and bedroom. The facility will also

include family activities rooms, community lounge, and classrooms for training. According to James Shepherd, chairman of the Shepherd Center, the facility will afford the family members of hospital patients a convenient and free-of-charge place to stay, providing the emotional support needed to patients of the Center during their recovery (Shepherd Center). This facility will be located adjacent to the Jane Woodruff Pavilion, the nearly-completed expansion project which will double the current size of the hospital.

### 3.2.3 – Related Plans

Because of its location on a major artery, the Peachtree Corridor, parts of the HIA study area are included in many existing and redevelopment plans by many different governing groups. The following is a description of selected plans pertaining to or including the HIA study area in their scope or direction.

#### The BeltLine

No project figures to shape the landscape of the study area more than the Atlanta BeltLine, a proposed 22-mile loop of transit, trails, and greenways that will border Piedmont Hospital. Atlanta BeltLine, Inc., the city-created corporation tasked with building the BeltLine, and the BeltLine Partnership, a non-profit group dedicated to seeing the project to fruition, have described how the proposed development would be implemented in the study area (see FIGURES 3.8 and 3.9):

...The BeltLine then crosses under I-75 just east of Northside Drive and connects to Tanyard Creek Park. At Tanyard Creek Park, the BeltLine trail diverts north through Bobby Jones Golf Course and Peachtree Creek. The Transit line then connects directly to the rear side of Piedmont Hospital, a major employment center on Peachtree... From Peachtree Road at Piedmont Hospital, the BeltLine heads northeast to connect with MARTA at Lindbergh City Center. Turning back south, it runs through the Armour industrial district, under I-85, Ansley Mall, the Botanical Gardens and Atlanta's crown jewel—Piedmont Park. Just a few blocks away from Midtown and the Virginia-Highland commercial district, the BeltLine passes by Grady High School (The BeltLine Partnership).

The proposed BeltLine transit system would have six stops within the study area, identified in FIGURE 3.10 as follows:

- Number 39: Northside Drive
- Number 40: Collier Road
- Number 41: Peachtree Road
- Number 42: Lindbergh Drive
- Number 43: Armour Drive
- Number 1: Montgomery Ferry Road

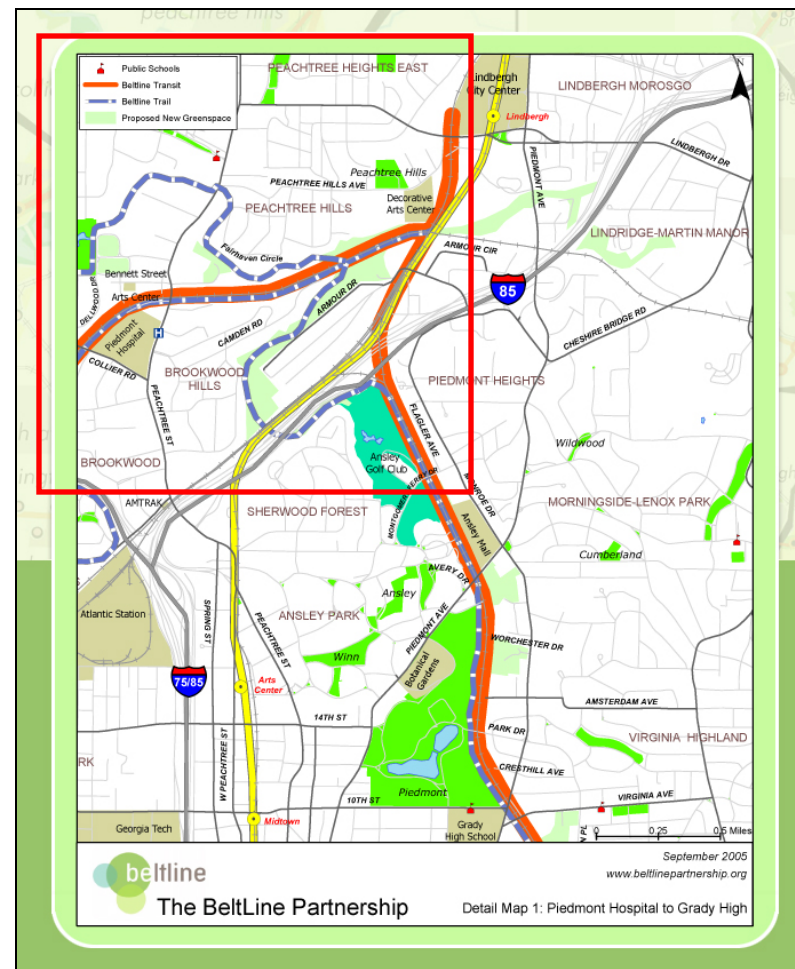
**FIGURE 3.8 – The BeltLine Map Detail #7- Marietta Street to Piedmont Hospital**



SOURCE: The BeltLine Partnership

\* Study area identified by red box.

**FIGURE 3.9 – The BeltLine Map Detail #1- Piedmont Hospital to Grady High School**

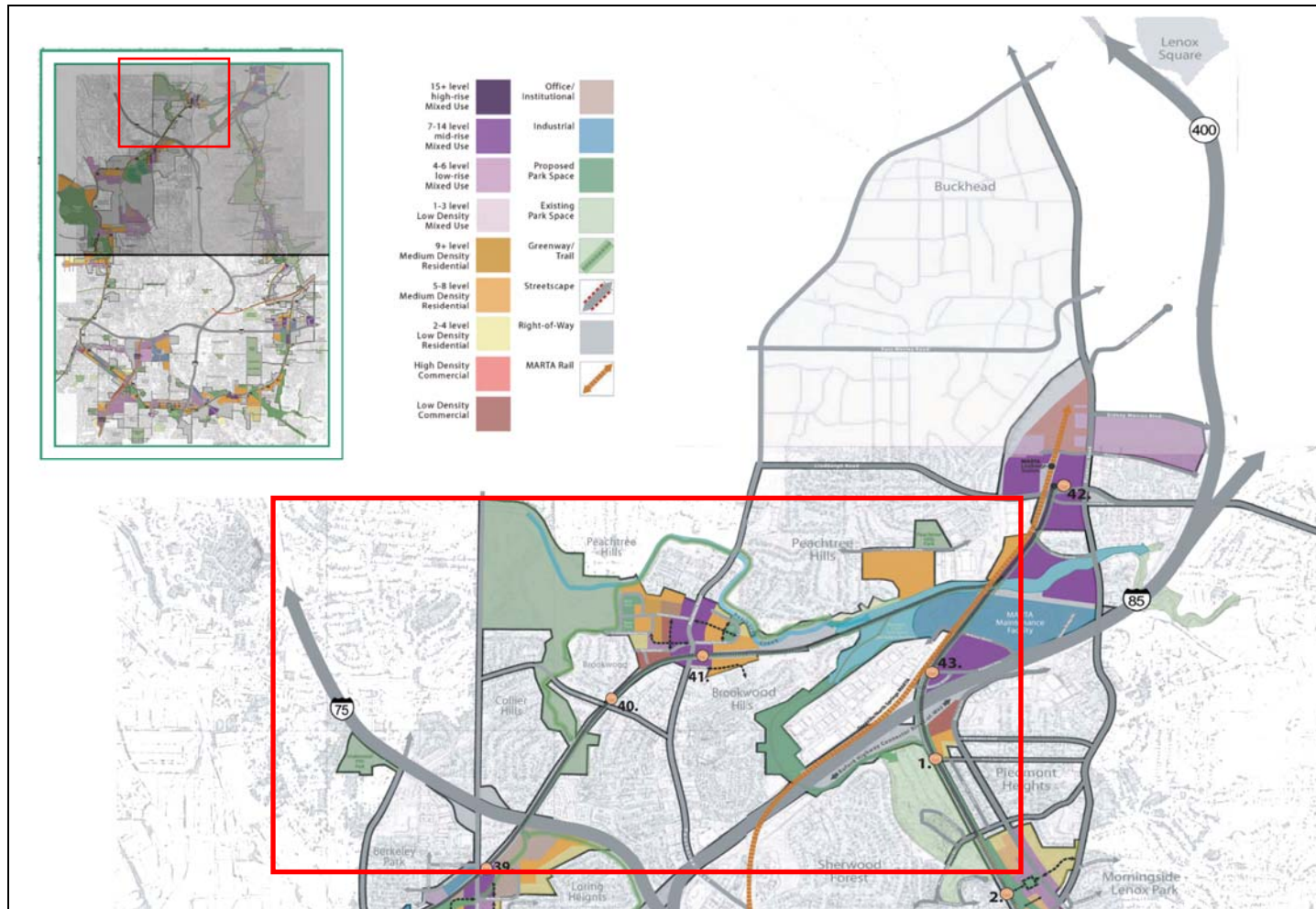


SOURCE: The BeltLine Partnership

\* Study area identified in red box.



**FIGURE 3.10 – Proposed BeltLine Transit Stops within the Study Area**



SOURCE: The Atlanta BeltLine Redevelopment Plan, Atlanta Development Authority, 2005

\* Study area identified by red box.

### **The BeltLine Redevelopment Plan**

The BeltLine, in addition to connecting disparate locales and creating a system of parks and greenways, seeks to promote investment and re-development at key activity centers. One such key center, as detailed by the Atlanta BeltLine Redevelopment Plan, is focused on the Peachtree Road Corridor adjacent to Piedmont Hospital (Atlanta Development Authority, 2005). Currently, the intersection of Peachtree Road and the CSX rail line, which serves as the BeltLine right-of-way, is characterized by relatively low-density development. This segment of Peachtree Road serves as a buffer between the intensely developed high-rise districts of Buckhead and Midtown, and is distinguished by the Piedmont Hospital campus and the Bennett Street antiques and gallery district, along with well-maintained, relatively new development.

### **Land Use**

BeltLine planners, however, believe the strategic location of this Peachtree activity center will dictate long-term redevelopment at a scale more reminiscent of its high-density neighbors to the north and south. The Atlanta BeltLine Redevelopment Plan envisions residential uses between ten and fifteen stories, and commercial buildings between eight and twelve stories, compatible with the urban context (see FIGURE 3.12) (Atlanta Development Authority, 2005). The plan recommends five to eight-story buildings adjacent to mixed uses, with slightly smaller buildings along the BeltLine right-of-way, as well as the creation of a “town green” focal point at the proposed redevelopment of Peachtree Park Apartments (Atlanta Development Authority, 2005).

### **Transportation**

The Atlanta BeltLine Redevelopment Plan also calls for several major transportation projects within the study area. It proposes an elevated transit plaza and station at the BeltLine that would contain connections between the plaza and Peachtree Road above (see FIGURES 3.11 and 3.12) (Atlanta Development Authority 2005). Planners hope to link this plaza with the proposed Peachtree Streetcar, making the node a vital connection point in the city’s transit strategy. The BeltLine trail will also link with the PATH Foundation’s Northside Drive Trail, and another multi-purpose trail will cross the town green, providing greater access to the node.

Street improvements within the study area are also part of the Redevelopment Plan. It advocates the creation of new streets, where possible, to shorten the connection between existing streets and to reduce block sizes to more “walkable” dimensions. Designers call for a new road that would connect the rear of the Piedmont Hospital parking deck with Peachtree Road, as well as for the realignment of Bennett Street to join Peachtree Park Drive at the intersection at Peachtree Road (Atlanta Development Authority, 2005). Finally, the Redevelopment Plan recommends extending Peachtree Valley to connect with the new low-density development adjoining the Brookwood Hills neighborhood (Atlanta Development Authority, 2005).

**FIGURE 3.11 – Redevelopment of the Proposed Peachtree Stop Transit Plaza**



SOURCE: The Atlanta BeltLine Redevelopment Plan, Atlanta Development Authority, 2005



**Legend**

- Low Density Residential
- Medium-High Density Residen.
- Low Density Commercial
- High Density Commercial
- Mixed Use
- Industrial
- Office/ Institutional
- Parking Lot/ Deck
- Open Space/ Park
- Plaza
- Beltline Trail
- Beltline Transit
- Primary Streetscapes
- New Roadways
- Intersection Improvements

**Map Labels:**

- New Park
- 5-8 Stories
- 10-15 Stories
- Existing Residential
- Existing Residential Tower
- 10-12 Stories
- 8-12 Stories
- 6-12 Stories
- 8-12 Stories
- 4-6 Stories
- Existing Utility Sub Station
- Utility Easement
- COLLIER HILLS
- Existing Railroad
- Shepherd Center
- New Pedestrian Bridge
- Plaza
- 8-12 Stories
- Peachtree Stop, Transit Plaza & Transfer Point
- Peachtree Streetcar
- PEACHTREE PARK
- PEACHTREE CREEK
- PEACHTREE HILLS
- 2-4 Stories
- 5-8 Stories
- 4-6 Stories
- 5-8 Stories
- 2-4 Stories
- 5-8 Stories
- 2-4 Stories

**Scale:** 0 200 400 Feet

**North Arrow:** N

Hospitals and Community Health HIA

## **The Peachtree Corridor Study**

The study area landscape also stands to be redefined according to a long-term vision that hopes to transform the 14.5-mile Peachtree Corridor into a world-class boulevard (Peachtree Corridor Partnership, 2007a). The Peachtree Corridor Task Force recommended a 25-year, \$1 billion vision to transform the city's signature street into a boulevard characterized by high-quality streetscapes, pocket parks and public spaces, sidewalks, consistent signage, attractive lighting, and bicycle lanes. The Task Force also proposed a modern streetcar to unify the corridor, an idea exclusively advocated by the non-profit organization, Atlanta Streetcar, Inc.

The Peachtree Corridor project designates seven sub-areas along the corridor, with Piedmont Hospital serving as the anchor and mid-point of its 1.65-mile Brookwood segment of Peachtree Road (see FIGURES 3.13 and 3.14) (Peachtree Corridor Partnership, 2007a). Overhauling this segment, which will see the most dramatic short-term change according to the study, will involve a multitude of construction projects, the disruptions from which could affect the study area for more than two decades.

### **Transportation Improvements**

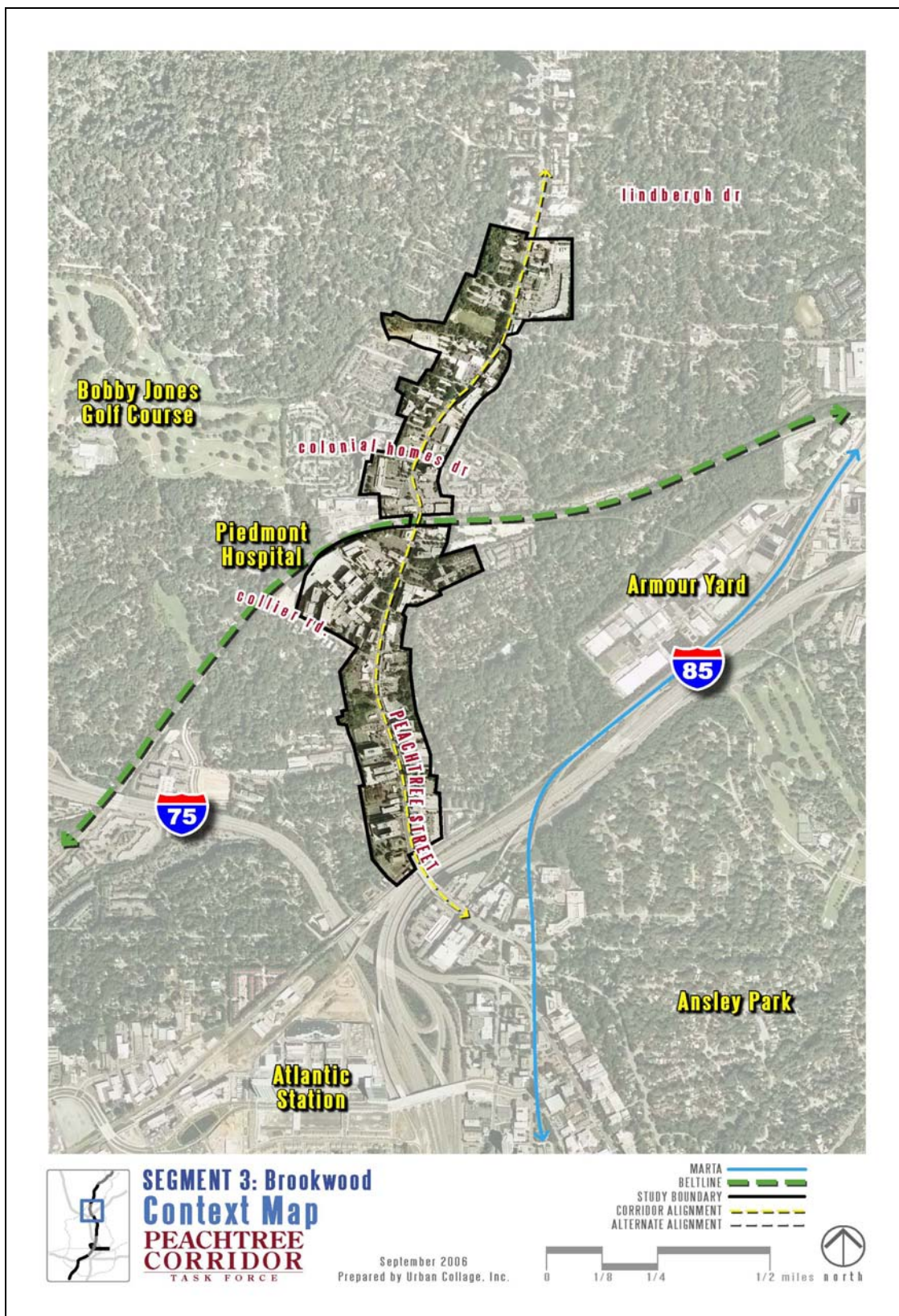
Peachtree Road would receive major renovations, including a raised concrete median, three travel lanes to accommodate both vehicles and streetcars, turn lanes at all major intersections, and space for parallel parking along the street. Streetcars would move at the same speed as traffic and would include stops every ¼ mile, with two stops planned for the Piedmont Hospital campus.

### **Pedestrian and Bicycle Enhancements**

In addition, the Peachtree Corridor study emphasizes enhancements that would improve access, provide enjoyment, and ensure safety for pedestrians and bicyclists (Peachtree Corridor Partnership, 2007a). Corridor planners believe a dedicated curbside bicycle lane would promote Peachtree Road as a recreational corridor for cyclists and encourage the bicycle as an alternate mode of transportation. Also recommended are wide sidewalks, planting and furniture zone buffers, and handicap facilities for the safety and comfort of pedestrians. The study notes that such accommodations would provide much-needed access to Piedmont Hospital, as well as to retail, offices, and the BeltLine. The increased pedestrian activity would increase demand for public spaces, a need that Corridor planners believe could be met by transforming Piedmont's front lawn into a green space with existing tree canopies, new walkways, plazas, seating areas, public art, water features, and garden space.

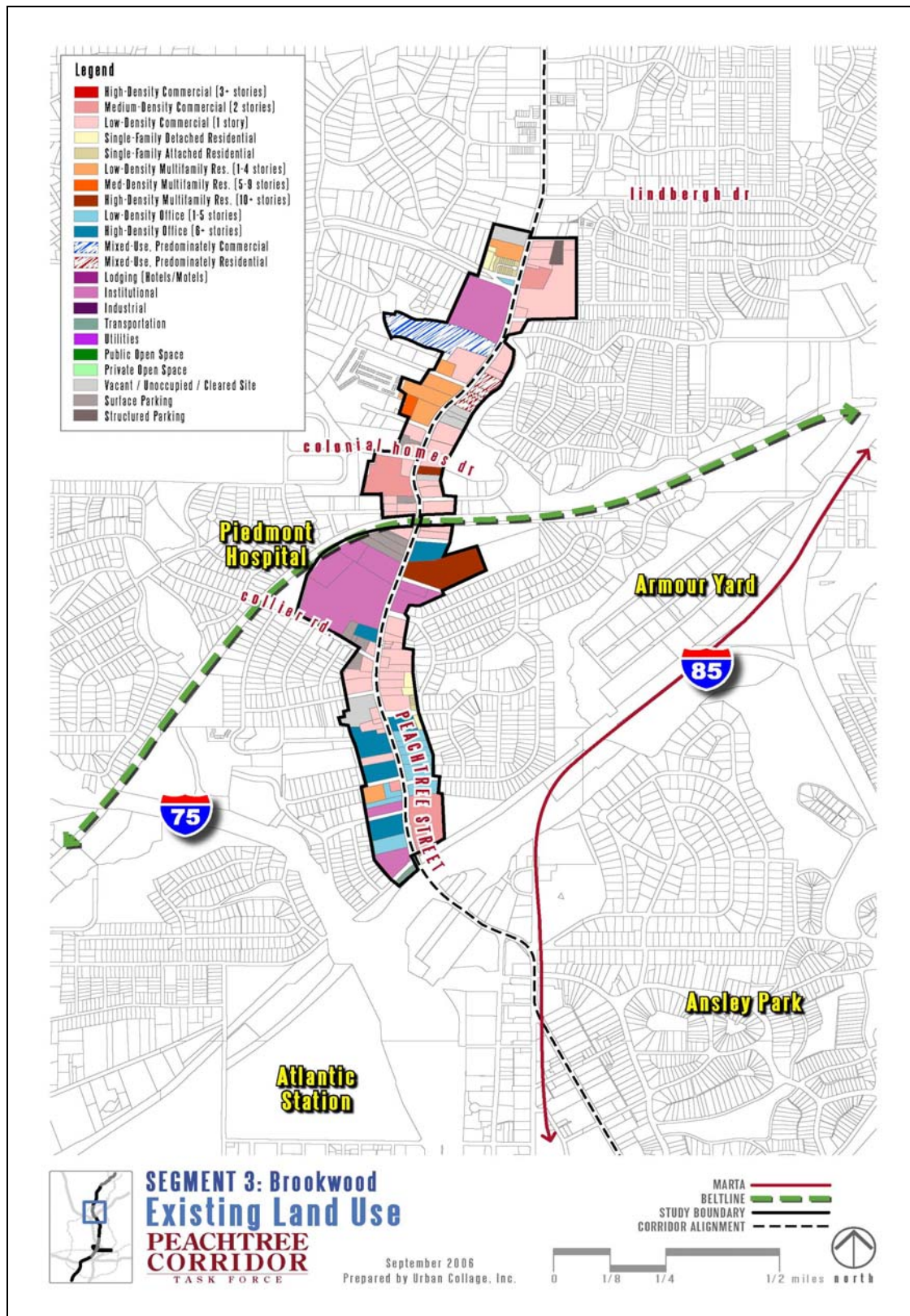


FIGURE 3.13 – Brookwood Segment Context Map



SOURCE: Brookwood Segment, Peachtree Corridor Partnership, 2007c

FIGURE 3.14 – Brookwood Segment Existing Land Use Map



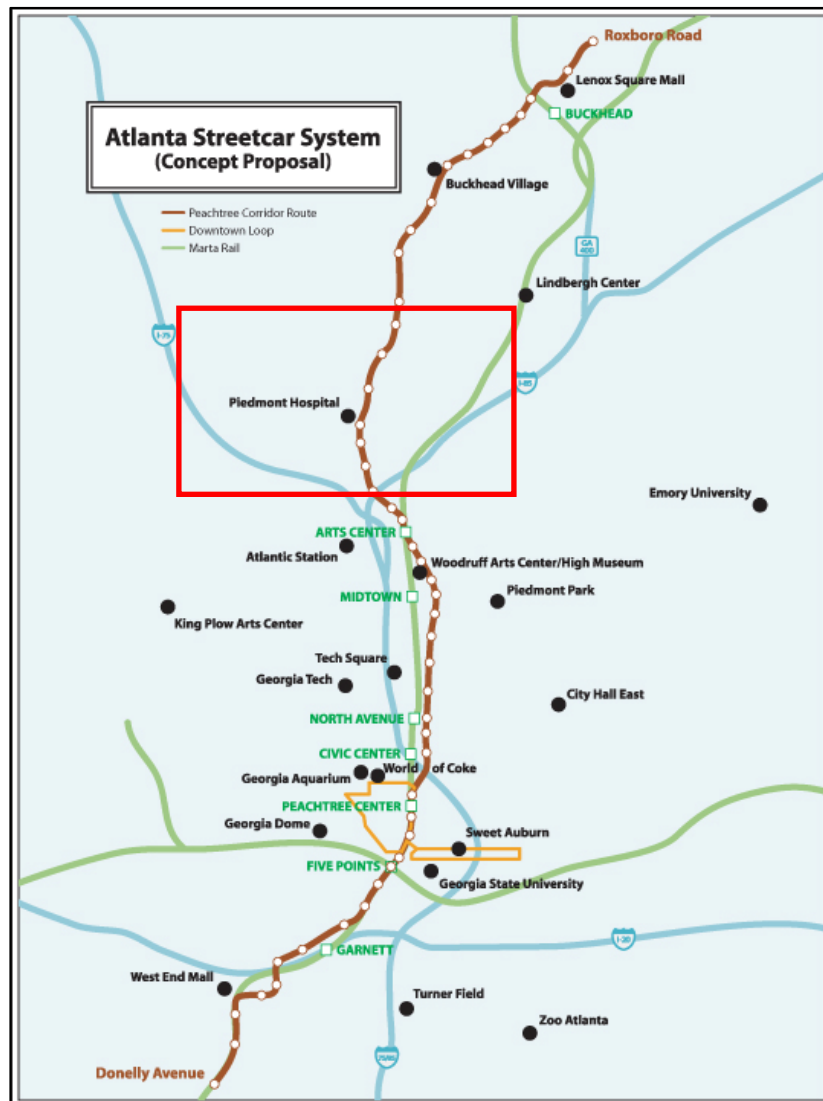
SOURCE: Brookwood Segment, Peachtree Corridor Partnership, 2007c



## The Atlanta Streetcar

The Atlanta Streetcar is a revival of the Peachtree Streetcar, disbanded over 40 years ago (see FIGURE 3.16). The proposed line will run along the Peachtree Corridor from downtown Atlanta (a loop circulating among Centennial Olympic Park, the Georgia World Congress Center, Philips Arena, the Georgia Aquarium, the World of Coca-Cola, and Auburn Avenue) to Buckhead (see FIGURE 3.15) (Atlanta Streetcar, Inc., 2004). The Atlanta Streetcar Feasibility Study (2004) suggests that the Peachtree Corridor provides an opportunity for streetcar service due to the potential for high-density infill development, two-way traffic (unlike other north-south corridors), slower traffic speeds than those on parallel streets, and existing pedestrian-friendly elements such as shorter block segments and relatively gentle grades (Atlanta Streetcar, Inc., 2004). By providing a distribution system and connecting it with existing and proposed mass transit infrastructures, the Atlanta Streetcar could provide an additional safe and efficient means of transportation to the Piedmont Hospital area.

**FIGURE 3.15 – Proposed Atlanta Streetcar System**



SOURCE: Atlanta Streetcar Feasibility Study, Atlanta Streetcar, Inc., 2004

\* Study area identified in red box.

## The Peachtree Streetcar

In the Peachtree Streetcar evaluation produced by Kimley-Horn and Associates, Inc. (2007a), two existing bridges in the Brookwood Section of the Peachtree Corridor would need to be replaced in order to accommodate streetcar services (Kimley-Horn and Associates, Inc., 2007a; Peachtree Corridor Partnership, 2007b). The first bridge crosses Peachtree Creek, just south of Peachtree Hills Avenue and the second bridge crosses the CSX railroad tracks, just south of Bennett Street/Peachtree Park Drive (the proposed tracks for the BeltLine project).

In the same report, future traffic patterns for segments along the Peachtree Corridor were determined based on previously developed growth rates and projected growth rates for the corridor. For the Brookwood segment of the Peachtree Corridor, the report predicted that traffic volumes would grow by 37 percent between 2007 and 2025 (Kimley-Horn and Associates, Inc., 2007a; Peachtree Corridor Partnership, 2007b).

When analyzing the Brookwood Segment of the Peachtree Corridor, U-turn concerns were raised due to the numerous existing curb cuts and driveways along Peachtree Road. The installation of a median would create many U-turns at median breaks and signalized intersections, causing vehicles to queue in the inside (left) lane. Access management would be vital along this segment. Also, due to the large number of vehicles attracted to the Piedmont Hospital campus, many intersections along this area are high volume and also cause traffic congestion and are in need of mitigation efforts.

In the study, Kimley-Horn and Associates (2007a) analyzed the level of service of existing conditions along the Peachtree Corridor, compared to projected levels of service with the implementation of the Peachtree Streetcar (Kimley-Horn and Associates, Inc., 2007a; Peachtree Corridor Partnership, 2007b). With the addition of medians along the Corridor, vehicles would only be allowed to turn at intersections, possibly creating vehicle queues at intersections and therefore increasing traffic congestion. Currently, the intersection of Peachtree and Collier Roads has a Level-of-Service (LOS) C; given the projected increase of traffic and additional U-turns at the intersection, the LOS would be expected to decrease but to a level that is still considered acceptable (see TABLE 3.2).

**FIGURE 3.16 – Streetcars on Peachtree Street in the 1940s**



SOURCE: Peachtree Streetcar Evaluation  
Kimley-Horn and Associates, Inc., 2007a.

**TABLE 3.2 – Vehicular Levels-of-Service (LOS) in Brookwood Segment (delay in seconds)**

Table 1.4 Vehicular Levels of Service (Delay in seconds)				
		Existing	Future	Future with Streetcar (MARTA Buses)
Segment 1: Buckhead Commercial	Peachtree Road @ Piedmont Road	F (212.6)	F (196.6)	F (216.6)
	Peachtree Road @ Maple Drive	C (23.6)	B (19.0)	B (23.9)
	Peachtree Road @ E. Shadowlawn Avenue	A (6.7)	B (10.5)	B (11.2)
	Peachtree Road @ Mathieson Drive	A (7.8)	B (10.7)	B (12.2)
	Peachtree Road @ Bolling Way / Sardis Way	C (31.5)	D (37.7)	D (38.6)
	Peachtree Road @ E/W Paces Ferry Road / Roswell Road	E (68.7)	D (37.4)	D (45.6)
	Peachtree Road @ Buckhead Avenue	C (22.8)	C (21.7)	C (22.8)
	Peachtree Road @ Pharr Road	D (37.7)	C (29.4)	C (30.2)
Segment 3: Brookwood Residential	Peachtree Road @ Peachtree Valley Road	A (5.4)	A (7.0)	A (7.3)
	Peachtree Road @ Brookwood Valley Circle	B (11.3)	B (10.6)	B (10.5)
	Peachtree Road @ Brighton Road	B (17.9)	B (13.8)	B (13.7)
	Peachtree Road @ Collier Road	C (31.5)	D (40.2)	D (51.7)
	Peachtree Road @ Palisades Drive	A (6.3)	A (5.8)	A (8.2)
Segment 4: Midtown	Peachtree Street @ 3 <sup>rd</sup> Street	B (10.6)	B (18.1)	C (30.3)
	Peachtree Street @ Ponce de Leon Avenue	B (17.3)	C (24.0)	C (21.3)
	Peachtree Street @ North Avenue	C (20.2)	C (27.1)	C (20.5)
	Peachtree Street @ Linden Avenue	B (18.5)	C (21.3)	B (17.4)
Segment 5: Downtown	Peachtree Street @ Baker Street	B (16.2)	B (17.3)	B (13.0)
	Peachtree Street @ Harris Street	B (14.8)	B (17.4)	B (16.0)
	Peachtree Street @ Andrew Young International Boulevard	B (17.0)	B (16.9)	B (17.2)
	Peachtree Street @ Ellis Street	B (16.6)	B (17.2)	B (16.0)

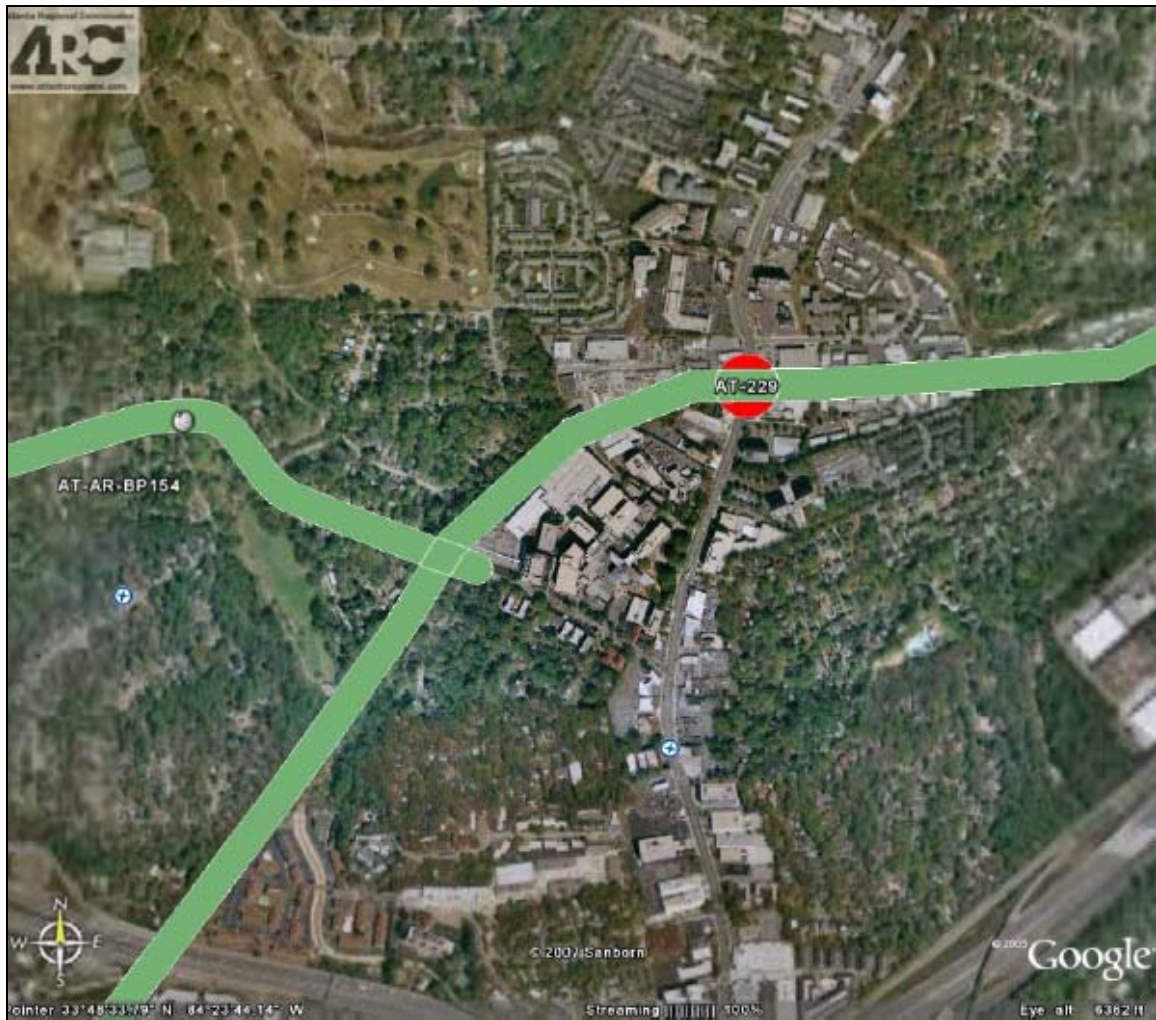
SOURCE: Peachtree Streetcar Evaluation, Kimley-Horn and Associates, Inc., 2007a

### Atlanta Regional Commission (ARC) Transportation Improvement Plan

The Atlanta Regional Commission, which serves as the area's designated metropolitan planning organization, calls for significant transportation improvements to meet the needs of a booming and graying population. The Atlanta Regional Commission's Envision6 Regional Transportation Plan stresses the need for alternative transportation strategies that will provide mobility to an elderly population projected to triple in size by 2030 (Atlanta Regional Commission, 2007b).

The short-range Transportation Improvement Program (TIP) allocates federal funding for transportation projects scheduled to be undertaken within the next six years (Atlanta Regional Commission, 2007c). These projects must be consistent with long-range objectives of the current Envision6 Regional Transportation Plan and must be financially constrained. Included in the 2008–2013 TIP Projects are several transportation projects that will improve access to Piedmont Hospital and the surrounding area (see FIGURE 3.17).

**FIGURE 3.17 – ARC Transportation Improvement Programs in the Study Area**



SOURCE: FY2008-2013 Transportation Improvement Plan, Atlanta Regional Commission, 2007c

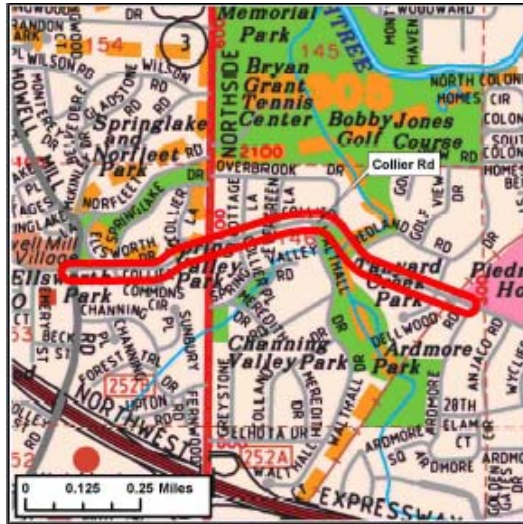
Originating in 2003 and implemented in 2006, this bicycle and pedestrian project (AT-AR-BP154) added  $\frac{3}{4}$  mile of sidewalks along Collier Road from Howell Mill Road to Ardmore Road, just west of Peachtree Road at Piedmont Hospital's complex entrance (see FIGURES 3.17 and 3.18).

In addition, the AT-229 project will replace a deficient 6-lane bridge on Peachtree Road (US 19/SR 9) at the CSX railroad crossing, immediately south of Bennett Street (see FIGURES 3.17 and 3.19). Preliminary engineering is expected to begin in 2008 and right-of-way acquisition and construction/implementation are expected to be completed by 2020. The 0.4-mile bridge replacement is projected to cost approximately \$8.53 million and is expected to be completed by 2020.

The transit service along the BeltLine Transportation Corridor (AR-451D) north of Piedmont Hospital was authorized for preliminary engineering in 2007. Right-of-way acquisition and construction and implementation are expected to begin in 2021 and completed in 2030 and is projected to cost approximately \$58.5 million. Project AR-450 calls for the implementation of a multi-use path along the BeltLine pathway to the north of Piedmont Hospital.



**FIGURE 3.18 – Sidewalk Construction on Collier Road from Howell Mill Road to Ardmore Road (AT-AR-BP154)**



SOURCE: Atlanta Regional Commission, 2007c

**FIGURE 3.19 – Bridge Replacement on Peachtree Road at CSX Railroad (AT-229)**



SOURCE: Atlanta Regional Commission, 2007c

## City of Atlanta Comprehensive Development Plan

There are a number of current programs and projects creating and updating bicycle facilities around the City of Atlanta (City of Atlanta, 2003b). By 2009, a bicycle facility is expected to be completed on Peachtree Road from Whitehall Street to Wesley Road. Two additional bicycle facilities are expected to be completed by 2019 on Peachtree Battle Avenue from Peachtree Road to Moores Mill Road and from Peachtree Road from Wesley Road to the City Limits.

In 1997, the Atlanta City Council established the Atlanta-Fulton Pedestrian Safety Task Force to discuss pedestrian safety issues in Atlanta and Fulton County (City of Atlanta, 2003a). The Task Force established short-range (one-year) and long-range (5- and 15-year) priority recommendations in order to improve pedestrian safety, increase connectivity to major destinations and other modes of transportation, and improve economic development potential. There are multiple pedestrian facilities suggested by the Atlanta-Fulton Pedestrian Safety Task Force to be implemented in the study area over the next 15 years.

Four pedestrian facilities were completed in 2004:

- Deering Road from Peachtree Road to Northside Drive;
- Howell Mill Road from Northside Parkway to Collier Road;
- Peachtree Hills Avenue from Lindbergh Drive to Peachtree Road; and
- West Wesley Road from Moores Mill Road to Habersham Road.

Three projects are expected to be completed in 2009:

- Collier Road from Howell Mill Road to Peachtree Road;
- Arden Road from Peachtree Battle Avenue to West Paces Ferry Road; and
- Northside Drive from I-75 to Peachtree Battle Avenue.

One long-range project on Ardent Road from Peachtree Battle Avenue to West Paces Ferry Road is expected for completion in 2019.

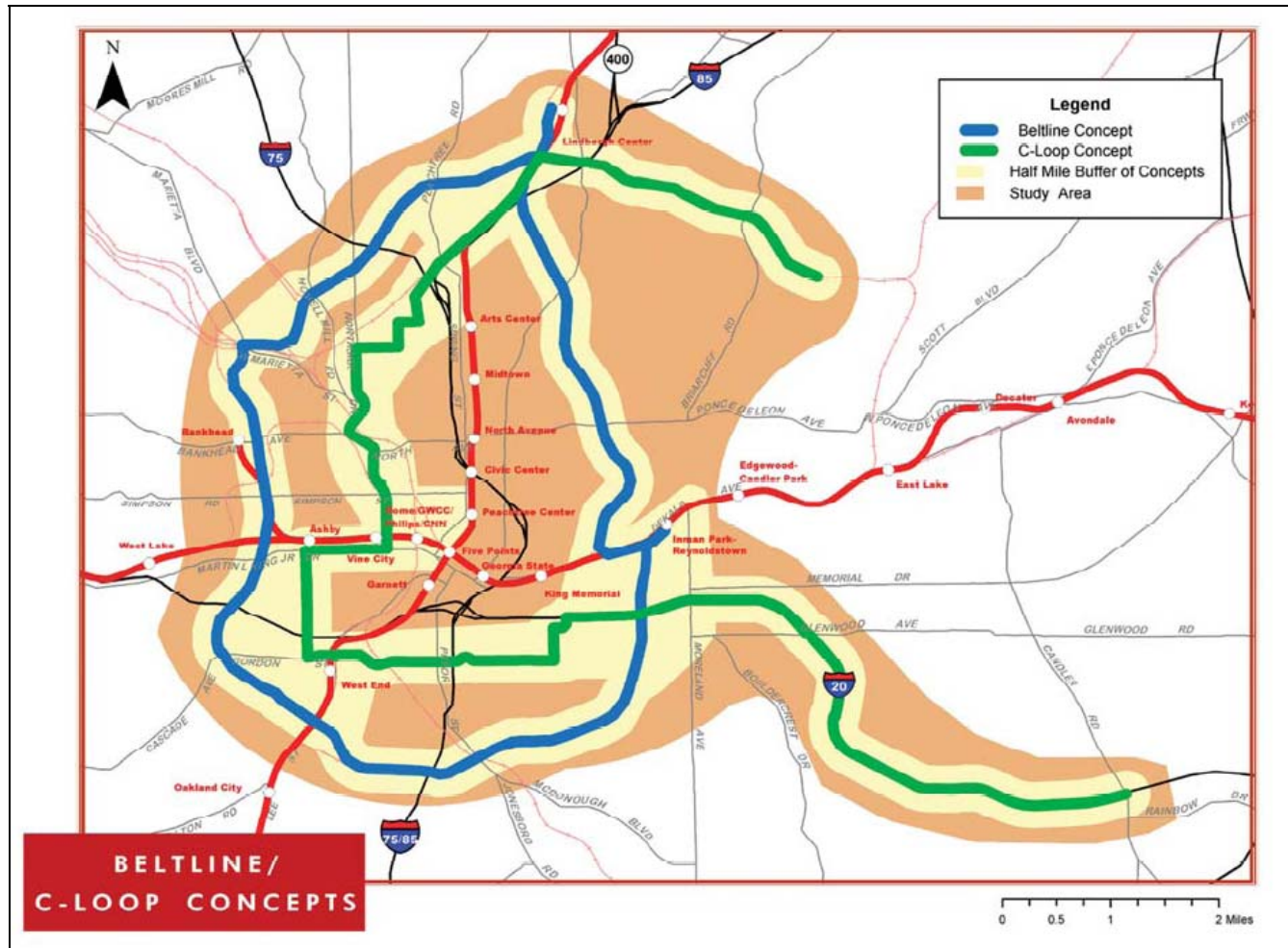


## **MARTA – Inner-Core Feasibility Wrap-Up Report**

The Inner-Core Feasibility Study (2005) was initiated in April 2003 to explore the proposed Inner-Core Concept, a combination of two earlier MARTA studies—the BeltLine and the C-Loop corridor—proposed for connecting residential neighborhoods, urban villages and centers of activity in the inner core area (Metropolitan Atlanta Rapid Transit Authority, 2005). The study identifies the “inner core” as a 29,115-acre area including Downtown Atlanta, Midtown, and their surrounding neighborhoods (see FIGURES 3.20, 3.21 and 3.22). The purpose of the study was to assess and determine the most appropriate transit investments needed within the inner core of Atlanta and to address those needs (Metropolitan Atlanta Rapid Transit Authority, 2005).

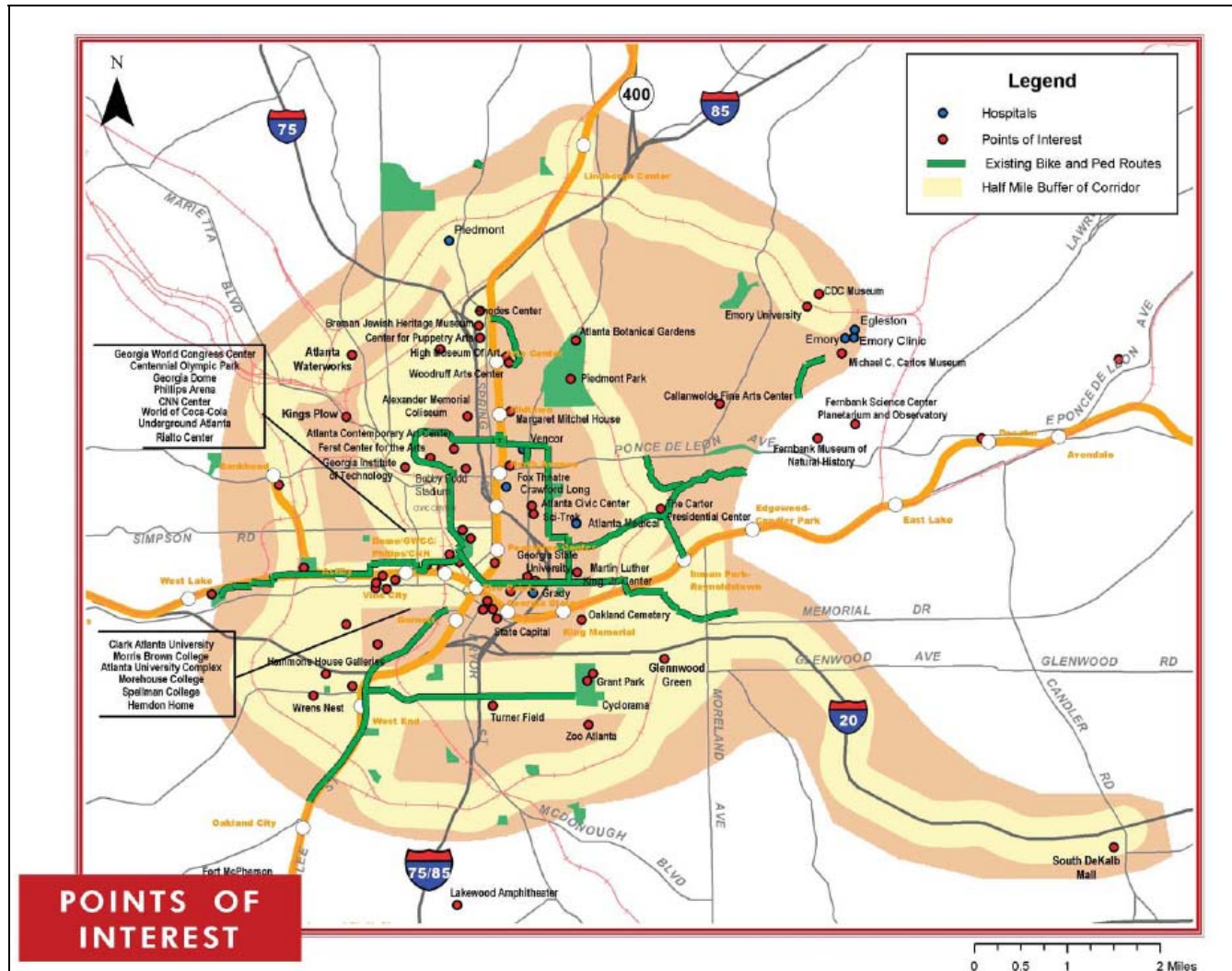
The study area is within Zone 10- Northwest CSX Line (see FIGURE 3.22). The feasibility study predicted that increasing transit options within the inner core would “increase direct access to the major activity centers and points of interest in the area, including those residences, businesses, and centers of activity in the Piedmont Hospital area” (Metropolitan Atlanta Rapid Transit Authority, 2005).

FIGURE 3.20 – Inner-Core Feasibility Report – BeltLine / C-Loop Concept



SOURCE: Inner-Core Feasibility Wrap-Up Report, Metropolitan Atlanta Rapid Transit Authority (MARTA), 2005

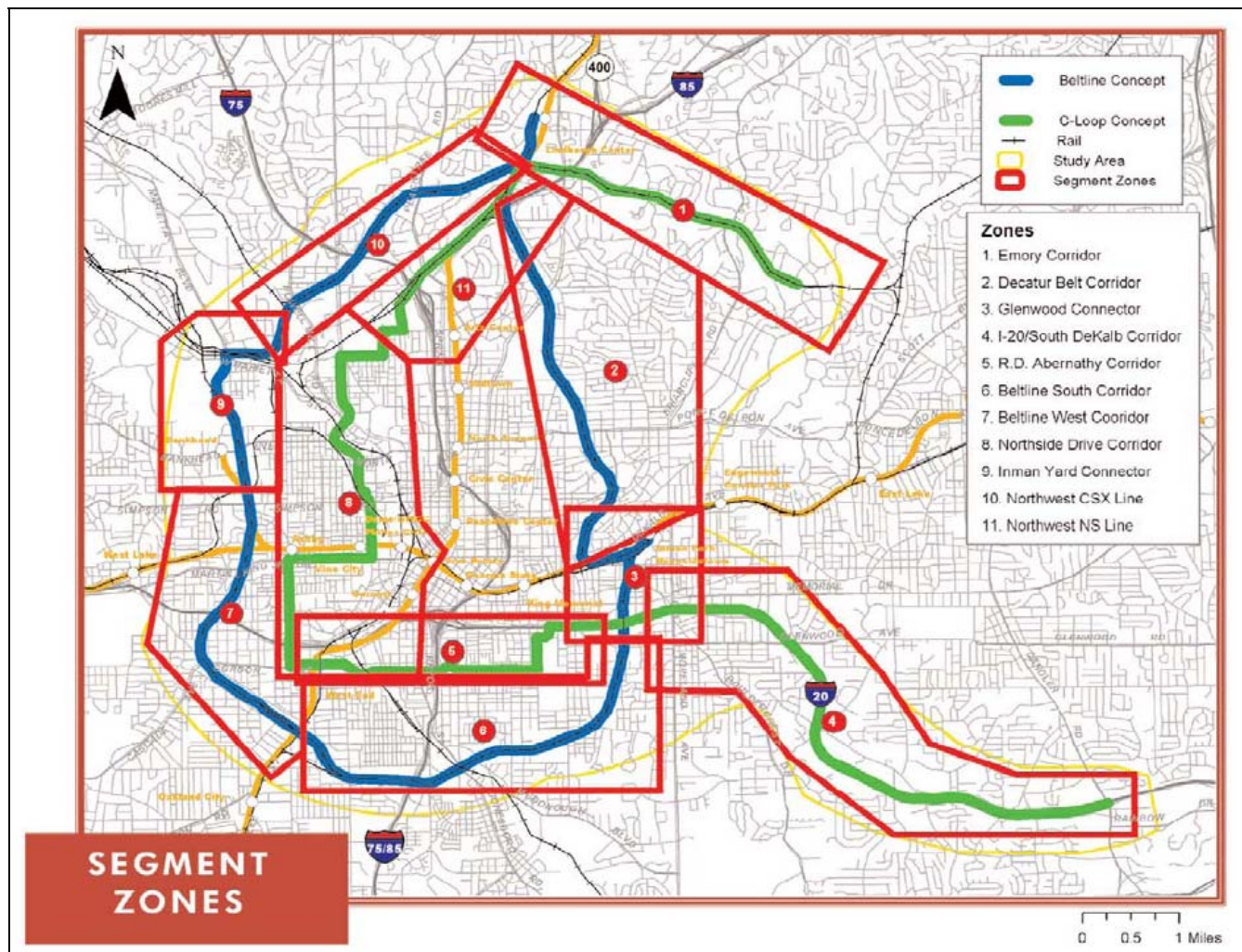
FIGURE 3.21 – Inner-Core Feasibility Report – BeltLine / C-Loop Points of Interest



SOURCE: Inner-Core Feasibility Wrap-Up Report, Metropolitan Atlanta Rapid Transit Authority (MARTA), 2005



FIGURE 3.22 – Inner-Core Feasibility Report – BeltLine / C-Loop Segment Zones



SOURCE: Inner-Core Feasibility Wrap-Up Report, Metropolitan Atlanta Rapid Transit Authority (MARTA), 2005

## 3.3 – Selected Future Development

### Mezzo | 2171 Peachtree Road

Mezzo is a new 20-story condominium tower located at 2171 Peachtree Road in South Buckhead and is expected to be completed March 2008 (Colliers Spectrum Cauble, 2008). The tower will contain 94 condominium units in addition to 2,825 square feet of restaurant and patio space. According to the Colliers Spectrum Cauble marketing information package, Mezzo is “situated between Peachtree Hills, Collier Hills, and Peachtree Battle neighborhoods and it is also within walking distance of Bennett Street shops, Peachtree Battle Shopping Center and Piedmont Hospital” (Colliers Spectrum Cauble, 2008). This section of Peachtree Road in front of the site is expected to carry approximately 41,000 VPD (vehicles per day).

### The Brookwood | 1820 Peachtree Road

The Brookwood is a proposed mixed-use development located on approximately 2.57 acres at the intersection of Peachtree Road and 28th Street and is expected to be completed in Spring 2009 (The Brookwood Website, 2008; Atlanta Regional Commission and City of Atlanta, 2006). The Georgian architecture of The Brookwood will blend into the existing mixture of commercial, office, and residential uses in the area. The 20-story building will offer 219 condominium units ranging from 1,200 to 2,900 square feet, as well as 21,000 square feet of retail and restaurant space.

### Piedmont West Medical Office | Howell Mill Road at I-75

Breaking ground in June 2007, Piedmont West, a mixed-use development, is owned, developed, and leased by Carter Development. Phase I is located off I-75 on Howell Mill Road and will include 248,000 square feet of Class A medical office space and 9,000 square feet of retail space, in addition to 1,028 dedicated parking spaces (Carter Real Estate, 2007). Meeting green building standards, Piedmont Hospital has pre-leased 75,000 square feet of multi-tenant Class A medical office space for its expansion and relocation of many outpatient services. Phase I of Piedmont West is expected to be completed in September 2008 and cost \$71 million. Future phases may include additional office space or hotel space.

## 3.4 – Summary Remarks

For the neighborhoods abutting either side of the corridor, there are many substantive changes in land use and characteristic that can be expected from the proposed plans that have been discussed in this section. Some of the projects could provide greater access to transit, parks and multi-use trails as well as a more diverse selection of amenities. However, the transformation into a high-density urban center could pose significant threats to the health and quality of life of residents. Redevelopment at the projected scale will increase the road congestion, cut-through traffic, disturbing noise, poor air quality, and inadequate pedestrian infrastructure already encountered by the community. Furthermore, the construction of several medium and high-rise condominiums will add hundreds of residents and added pressure to the study area.

Despite the dramatic changes expected, Piedmont Hospital's 26-acre campus will continue to represent the figurative heart of the study area. The hospital serves as the community's most important anchor institution, uniquely positioned to not only impact the well-being of its own clientele, but also the health and safety of all neighborhood residents calling the area home.

# Section 4:

## Assessment of Impacts

### 4.1 – Traffic

The study area includes the Peachtree Corridor, which carries heavy volumes of traffic and has congestion at critical intersections. This corridor also contains heavily-used bus routes, and a confluence of different transportation modes (existing or planned). The Peachtree Corridor is a commercial corridor containing a diverse mix of land uses. Additionally, the Collier Road corridor experiences heavy traffic congestion due to cut-through traffic and hospital traffic and, despite the presence of sidewalks, can be a potentially dangerous environment for pedestrians and for bicyclists (see the Walkability Audit in Section 4.2 and Appendix A.4). This area has been the site of a large number of automobile crashes in recent years (see Section 4.1.2). The study area, especially the area immediately surrounding Piedmont Hospital, is under intense development pressure which intensifies traffic and congestion levels, increasing the risk of injury for residents of the study area as well as hospital patients, staff, and visitors. These changes to the area could magnify the potential risks to pedestrians and bicyclists in an already challenging environment. Additionally, these same factors may serve to limit pedestrian and bicycle activity and therefore reduce the overall levels of physical activity in the area.

This section provides an overview of some of the broader ways that traffic and traffic congestion can affect health, provides an assessment of the study area, discusses the implications of the proposed projects in the area, and then offers recommendations on how to maximize potential positive health effects and mitigate potential negative health effects.

#### 4.1.1 – Impacts on Health

There are many potential impacts on health stemming from traffic and traffic congestion. These impacts include crash-related injuries, effects on physical activity levels, air-quality impacts, and effects on social capital. This section talks about impacts on physical activity, air quality, noise, and social capital,

## Physical Activity

Physical activity refers to exercise, recreational activity, and activity that is a result of everyday life. Health impacts related to physical activity levels include many chronic diseases, such as obesity, diabetes, cardiovascular disease, and some cancers.

Chronic disease has replaced infectious disease as the leading cause of death in all populations, precipitating the need to reconsider the link between health and the built environment. Whereas infectious disease results from contact with viruses and bacteria, chronic disease is largely, although not exclusively, an issue of lifestyle (diet, activity level, tobacco use) and long-term exposure (contact with toxic substances and unhealthful environments). Because research shows that many chronic diseases, such as obesity, diabetes, cardiovascular disease, and some cancers, can be prevented or controlled by engaging in physical activity, physical activity has become an important part of the discussion on health and the built environment.

Obesity in the United States is often referred to as an epidemic. It affects approximately 30 percent of the population, and continues to rise. Since 1985, the CDC's Behavioral Risk Factor Surveillance System (BRFSS) has tracked changes in Body Mass Index (BMI) for each state. In that time, the obesity rate has nearly tripled in most states. The problems of obesity and overweight contribute to as many as 20 percent of all U.S. deaths each year. They are also estimated to result in over \$90 billion in medical expenses alone, and many billions more in terms of lost productivity, increased fuel costs, and more. In Georgia, 27 percent of residents were obese in 2006, and 62 percent were either obese or overweight.

Physical activity can help prevent obesity, depression, cardiovascular disease, arthritis, sleep disorders, and some cancers. Even for those who are obese, regular moderate physical activity improves health and reduces mortality. Overall, physical inactivity is a major risk factor for disease and death. As of 2005, only 42 percent of Georgia residents met recommendations for physical activity (30+ minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20+ minutes three or more days per week). Walking or bicycling, either for exercise or transportation, provides moderate physical activity and is linked to improved health. Additionally, these forms of activity are very affordable and easily adopted, even by individuals with poor health (Frank and Engelke, 2001).

Prior to health officials becoming interested in the physical environment, transportation planning researchers had studied the relationship between the built environment and travel behavior. Given the primacy of the automobile for transportation in the U.S., most travel-behavior research has traditionally focused on automobile travel, not bicycle or pedestrian modes. Census data indicate that fewer people are walking and biking to and from work: trips made by walking and biking dropped from 7 percent in 1980 to only 4 percent in 1990 (U.S. Census Bureau 1980; U.S. Census Bureau 1990). The growing dependence on automobile travel versus other modes of travel may have considerable implications for physical activity and health.

The reasons for inadequate transport-related physical activity are a mixture of behavioral, physiological, and environmental factors. By changing the built environment, physical activity patterns can also change. Community design that is supportive of alternative methods of transportation (such as walking and bicycling) and recreational opportunities is linked to increased physical activity. The Community Guide, published by the Centers for Disease Control and Prevention (CDC) has concluded that:

[c]reation of or enhanced access to places for physical activity combined with informational outreach activities, point-of-decision prompts, street-scale urban design and land use policies and practices, and community-scale urban design and land use policies and practices are effective approaches to increasing physical activity (Guide to Community Preventive Services).



Traffic is an important consideration for bicyclists and pedestrians. Traffic, pedestrian facilities, infrastructure and the built environment, and personal safety are issues that can directly affect physical activity levels. Neighborhoods with high traffic volume and speeds, lack of pedestrian or bike amenities like sidewalks and paths, and issues related to crime or incivilities (litter and graffiti) do not encourage or support physical activity (Emerine and Feldman, 2005). Heavy traffic can make it difficult to cross the street to reach a desired destination. It creates an unpleasant environment that may be noisy, filled with strong exhaust odors, or have things spray from the road such as gravel or water. Additionally, the fear of being struck by a vehicle discourages many people from walking or cycling near a busy road, and has been linked to parents' reluctance to have their child walk or bike to school (McMillan, 2005). These problems increase as traffic volume increases, as the average speed increases, if motorists drive recklessly or aggressively, or if there is insufficient enforcement of or compliance with traffic regulations. Research has found that people who do not feel safe from traffic are less likely to walk or bicycle for transportation (Hoehner et al., 2005, Pikora et al., 2003). Some people's behavior may be more strongly influenced than others, based on their perception of their own abilities; the elderly, women, and people accompanying children fall in this category. Additionally, people may avoid walking or cycling because they are worried about exposure to pollution caused in large part by motor vehicle emissions. Several HIA survey respondents specifically referred to pollution as a factor that made them less likely to walk or bicycle. Freight traffic, ambulances, or service vehicles may cause a greater share of noise and emissions.

Even with improvements and additions to pedestrian and bicycle facilities, traffic issues are likely to persist in the study area. The study area—surrounding Piedmont Hospital and generally encompassing the north sub-area of the BeltLine—exhibits several infrastructural and built environment characteristics that could create the possibility of unintentional injury. Furthermore, proposed development and transportation changes in the area could exacerbate risk levels for pedestrians. Unintentional injury—particularly related to motor vehicle crashes—is the leading cause of death for Americans under the age of 44 (Centers for Disease Control and Prevention, 2003). It is a factor for older adults as well, although heart disease, cancer, and other chronic diseases far outweigh its impact. Overall, more than 100,000 deaths (5 percent) can be attributed to injuries in the U.S. each year.

Higher density, diversity of land uses, and good pedestrian facilities can reallocate many trips to transit, walking, or biking, thereby reducing motor vehicle volume (Cervero, 2002). Traffic speed is the key determinant for pedestrian injury risk for children (Jacobson et al., 2000). Traffic safety improvements in California resulted in a 65 percent increase in walking, and a 114 percent increase in biking to school among children (Staunton et al., 2003). The presence of public transit service has been linked to increased physical activity as well, especially for older adults (Pikora et al., 2002; Hoehner et al., 2005; Borst et al., 2008). In the Netherlands the number of days youth (6-11 years) met physical activity recommendations increased with increased access to sports facilities, greenspace and residential areas with limited access to traffic while parking spaces, intersections, and heavy bus and truck traffic were associated with less activity (de Vries et al., 2006).

### **Pedestrian and Bicycle Facilities**

Pedestrian facilities include walkways (such as a sidewalk or path), street crossings including signals, and amenities including a buffer area between the walkway and street, benches and trash cans, curb ramps, and lighting. Extensive, continuous, well-maintained sidewalk facilities are believed to be the most important factor in walking for both transportation and recreation (Booth et al., 2000; Lee and Moudon, 2006; Michael et al., 2006; Pikora et al., 2006). Cervero (2002) found that the ratio of sidewalk miles to road miles, at both trip origin and destination, had a significant ability to reduce drive-alone trips. Addy (2004) also concluded that access to sidewalks, and good lighting, was related to increased physical activity. Ayres (2006) found that pedestrians could travel on sidewalks with significant trip hazards, but that this may cause them to slow down or give more attention to the walkway, thus delaying their travel or increasing their

risk from other sources. Hunt-Sturman and Jackson ([In Press]) identified slope, slip resistance, trip hazards, obstructions, surface contaminants, disabled access, and collision potential as factors to assess the quality of walkway surface. Tan et al. (2007) determined that, while pedestrians reported obstructions as an important factor in their walking comfort, the overall acceptability of a pedestrian walkway was a function of the ratio of motor vehicle traffic volume to the distance between roadway and walkway, driveway frequency, and bicycle traffic volume. Other important factors include a fast, direct route and safe crossing opportunities (Bernhoft and Carstensen, 2008). Sisiopiku and Akin (2008) found that many pedestrians preferred mid-block crossings for their convenience and lack of signal delay even though they perceived them as less safe; however their research was conducted adjacent to university property and may have used a non-representative sample of pedestrians. Overall, there has not been considerable research conducted specifically on the correlation between street-crossing facilities and walking. It has been shown, however, that directness of route is the most important feature for pedestrians who are walking for transportation (Agrawal et al. 2008). Diversion from a direct route to a destination due to infrequent crossing opportunities is likely to discourage some walking. In practice, it appears that a combination of pedestrian-supportive facilities—resulting in a safe, accessible, and comfortable walking environment—are most likely to influence walking behavior (Alfonzo et al. 2008).

Access to bicycle lanes and recreational facilities has been linked to increased inclination to bicycle and increased physical activity (Hoehner, 2005; Bernhoft and Carstensen, 2008). In other cases where trails have been created on a former railway, bicycling increases in the area around the trail, and people living within 1.5 km of the trail increased their average daily time spent riding a bicycle (Merom et al., 2003). Overall, residents are more likely to bicycle when there are bicycle lanes and trails and less likely when many automobile facilities—such as parking lots—are present (Moudon et al., 2005). On-street bicycle lanes can connect a multi-use trail to homes and destinations; these facilities are often recommended when less skilled bicyclists are expected. However, they must be continuous, maintained and enforced, and compliant with guidelines issued by the American Association of State Highway and Transportation Officials (Krizek and Roland, 2005).

### **Transit**

A survey of the literature indicates that taking transit is linked to physical activity. Besser and Dannenberg (2005) found that Americans who use transit average 19 minutes of daily walking going to and from transit. Thus increasing access to transit could significantly increase the opportunities to be physically active, as most transit trips incorporate walking to and/or from destinations. The study also found that 29 percent of people walking to and from transit achieve the recommended level of 30 minutes of daily physical activity. The ability and likelihood of an individual walking to a transit station have been found to be affected by distance to station, density, number of parking spaces, grid pattern, physical quality of the environment, facility conditions, time, cost, and individual level factors, i.e. gender, ethnicity, age, income, and education (Loutzenheiser, 1997).

### **Sports and Recreational Facilities**

Access to recreational facilities (including paths, parks, ball fields, or playgrounds) has been linked to increased activity, especially in adolescents (Hoehner et al., 2005; Pate et al., 2007; Babey et al., 2008; Floyd et al., 2008). Specifically, installation of a multi-use trail has been associated with an increase of bicycling in the area (Merom et al., 2003). Park space with more areas designed for active rather than passive use (i.e. playgrounds, trails, and tennis courts or ball fields) tend to see greater levels of exertion by their users (Floyd et al., 2008).

### **Elderly and Disabled Persons**

Additional supports may need to be instituted for the elderly and people with disabilities. These populations are more likely to walk in an environment that reduces the likelihood of falling, accommodates their physical limitations, and functions well for some level of cognitive impairment. For instance, railings, curb ramps with tactile strips, auditory walk signals, walk signals of sufficient duration, median refuge islands on multi-lane roads, clearly marked intersections and warnings, places to rest, and a walkway free of obstructions or trip hazards have all been found preferable to elderly or disabled persons (Ferucci et al., 1996; Faulkner et al., 2006; Borst et al., 2008). Bernhoft and Carstensen (2008) found that older pedestrians and cyclists (70+ compared to 40-49) gave priority to sidewalks—especially smooth and well-maintained sidewalks—marked and signalized crossings, and bicycle facilities. About 7 percent of residents in the study area are at least 65 years old, according to census data. Among HIA survey respondents, 43 percent were 50 years old or above.

### **Building Design and Aesthetics**

There is some evidence that design features of buildings can influence physical activity (Zimmerman, 2005; Nicholls, 2007). An Australian study reported that, for men, the perceived aesthetics of their neighborhood were strongly associated with their tendency to walk there frequently (Humpel et al., 2004). Hoehner et al. (2005) also found that attractive features were associated with increased activity levels. According to Borst et al., (2008), aesthetic features, including trees, gardens, parks, and an absence of litter, increased the likelihood that an elderly person would choose to walk. However, Agrawal et al., (2008) noted that aesthetics were not as important as directness for pedestrians walking to transit. There may be design standards that can be selected for this area, including for hospital facilities, which are more conducive to being active, such as conveniently-placed and pleasant stairwells, more convenient access to pedestrian facilities than to parking, good circulation, and exercise facilities (Zimmerman, 2005).

## **Air Quality**

Air quality is a topic that has become increasingly important in recent decades. The various impacts of air quality on health, the environment, and quality of life in general have led to interventions such as the Clean Air Act of 1970, which was introduced to minimize the impacts of poor air quality by setting limits on the total amount of pollutants that can be released into the air in the United States. Air pollutants are introduced into the environment directly from mobile sources (automobiles, trucks, trains), stationary sources (factories, power plants), or indoor sources (building materials). Some pollutants, such as ozone, are the result of a chemical reaction of other pollutants.

Air quality regulations established by the Clean Air Act are built around National Ambient Air Quality Standards (NAAQS) for each of six types of ambient air pollutants: ozone, lead, nitrogen dioxide, particulate matter, carbon monoxide, and sulfur dioxide. All of these pollutants with the exception of particulate matter are gaseous substances. Particulate matter (PM) refers to solid particles and liquid droplets suspended in the air and is generally measured in PM 10, particulates with a diameter of 10 micrometers or less and more recently PM 2.5 (also referred to as fine particulate matter), particulates with a diameter of 2.5 micrometers or less.

Air quality is linked to health in a variety of ways. The health effects of these pollutants include reduced lung function, asthma and other respiratory illnesses, cancer, irritation of breathing passages, premature death, with children and the elderly being at a higher risk than the general population (U.S. Environmental Protection Agency, 2006).

Short- and long-term exposure to air pollutants can have health effects at both a regional and local scale. Increased rates of mortality and morbidity from cardiovascular and respiratory

diseases have been associated with various indices of air pollution, including gaseous pollutants generated by the burning of fossil fuels, but have been most strongly associated with air pollution that contains fine particulate matter (Health Effects Institute, 1999; Dockery et al. 1993; Lippman et al., 2002). Hospital admissions for cardiovascular and respiratory diseases in Europe and North America have been observed to be associated with PM and gaseous pollutants such as ozone, CO and NO<sub>2</sub> (Health Effects Institute, 1999).

The effects of gaseous and particulate pollutants on health have been found in both short-term (acute exposure) and long-term studies (chronic exposure) with effects being seen at very low levels of exposure. However research is ambiguous on whether or not there is a threshold concentration below which no effect on health will occur (Brunekreef and Holgate, 2002). Both short- and long-term exposure to particulate matter (PM) have been associated with increased rates of cardio-respiratory morbidity and mortality. This includes increased lung cancer risk, along with short- and long-term non-cancer health effects such as bronchitis, asthma, and reduced lung function (Bhatia et al., 2006). Additionally, PM 2.5 is seen to have an adverse effect on lung development in adolescents that can lead to lifelong lung deficiency (Gauderman et al., 2000; Gauderman et al., 2004). The elderly are also at increased risk for negative health effects stemming from exposure to PM. Research has shown that common emission sources for PM have significant associations with elderly cardiovascular hospital admissions and that modest amounts of air pollutants are associated with small changes in cardiac function in the elderly (Barnet et al., 2006; Mar et al., 2005).

Studies by Houston et al. (2006) and Fischer et al. (2000), have examined particulate matter's impact on human health. PM 2.5 is generally seen to have a greater negative effect on health, since the particles are small enough to be absorbed through lung tissue into the bloodstream, but both PM 2.5 and PM 10 can have a negative effect on health (Health Effects Institute, 1999; Health Effects Institute, 2001). Studies have indicated that vehicle-related fine particulate matter becomes highly concentrated in areas immediately adjacent (200 meters) to major roadways. Outdoor particulate matter concentrations (PM 2.5 and PM 10) are an estimated 15 to 20 percent higher at homes located in high traffic intensity streets compared to low traffic homes. Vehicle-related pollutants have been associated with increased respiratory illness, impaired lung development and function, and increased infant mortality. Also, pregnant women living within 200 to 300 meters of high-volume roads face a 10 to 20 percent higher risk of early birth and of low-birth-weight babies. In addition to general vehicle exhaust, exposure to fine particulates from diesel exhaust has a negative effect on those that live near roadways or areas such as rail yards or inter-modal yards with high diesel emissions. People living in immediate proximities (200 meters) of major diesel thoroughfares are more likely to suffer from respiratory ailments, childhood cancer, brain cancer, leukemia, and higher mortality rates than those who live further away. Research shows that particulate concentrations approach normal background levels at distances greater than 200 meters (Houston et al., 2006; Fischer et al., 2000).

Construction projects can contribute to a type of PM emissions called "fugitive dust." Fugitive dust accounts for 88 percent of total PM 10 and 66 percent of PM 2.5 emissions (U.S. Environmental Protection Agency, 1998). In urban areas, the most common cause of fugitive dust is vehicular movement on paved roads, unpaved roads, parking lots, and construction sites. The amount of dust emissions is closely related to vehicle shape, speed, weight, and number of wheels (Nicholson et al., 1989). Usually, dust emissions from paved surfaces are due to dust being tracked out from construction sites and other unpaved areas or spilled from construction vehicles (Chow and Watson, 1992). In addition, standard construction activities such as digging, scraping, and storing or moving materials create dust reservoirs that are targets for wind erosion (Watson and Chow, 2000).

## Noise

The most common source of noise disturbance is road traffic. The random but usually constant nature of traffic noise contributes to its ability to annoy along with its intermittent sound level variations caused by motorcycles, for example, or peak and off-peak traffic patterns (Alenius, 2001). Noise annoyance can disrupt activities such as sleeping. Sleep disturbance can impair the normal functions performed by sleep such as brain restoration and cardiovascular respite. It also has an effect on mood, fatigue, performance, cognitive abilities, vigilance, and can boost epinephrine levels which contributes to stress (Passchier-Vermeer and Passchier, 2000). Sensitive groups include the elderly, the sick, and shift workers. The maximum sound level should not exceed 45 dB(A), similar to a refrigerator, but is ideally around 30 dB(A) (Alenius, 2001).

### Construction Noise & Vibration

Construction noise and vibration levels will vary depending upon such factors as the type and condition of equipment, whether the equipment is stationary or mobile (crane versus a bulldozer), the type of work being performed, and the composition of the soil (clay, rock, sand) (FTA, 2006). Noise and vibration levels will be of greater concern at night than during the day when urban noise is at its loudest. They will also have greater impact in residential rather than commercial or industrial settings. The FTA points out these sources of construction-based noise and vibration to establish the necessity for conducting either a qualitative or a quantitative assessment of anticipated construction noise prior to the start of a project. Not every project requires an assessment: the need is based upon the type, scale, and duration of the project, as well as the type of equipment to be used and the noise-sensitivity of the surrounding area (FTA, 2006).

## Social Capital

Social capital can be defined as the collective value of a network—social, political, and economic—whose purpose is to inspire trust in and provide support for other members of that community (Dannenberg et al., 2003; Loutzenheiser, 1997). Social capital is built both formally, through participation in group activities, and informally, through casual associations and encounters. It is the degree to which people feel that they live in and belong to a socially cohesive local environment, and the range of activities and resources that emerge as a consequence of those ties.

Automobile dependence, in particular for commuting long distances, has been correlated with decreased social capital (Ewing & Kreutzer, 2006). Robert Putnam (2000) found that each 10 minutes spent commuting translates directly into a 10 percent decrease in community involvement (Putnam, 2000). Traffic volume has been shown to affect people's sense of community; as traffic volumes increase, people's social capital decreases. Similarly, research suggests that people residing on streets with light traffic volumes have larger social networks than those on streets with heavy volume (Lavin et al., 2006). The link between high traffic volume/speed and low social capital stems primarily from three causes: fear for personal safety, which limits walking and children playing outside; not wanting to walk in an unpleasant environment; the physical divide caused by the amount of traffic, its speed, and the width of the road (Lavin et al., 2006).

## 4.1.2 – Assessment

### Traffic Counts

The Georgia Department of Transportation (GDOT) State Traffic and Report Statistics (STARS) collects Annual Average Daily Traffic (AADT) counts from permanent and portable collection devices for each segment of the State Highway System (Georgia Department of Transportation, 2007). There were a total of six collection devices in the study area, collecting data from 2002 to 2007 (see FIGURE 4.1).

Traffic counts at the intersection of Peachtree Road and Biscayne Drive jumped from almost 40,000 in 2002 to over 50,000 in 2003. However, from 2003 to 2007, the daily traffic counts have continued to decrease to 39,670 in 2007. Traffic counts have remained relatively stable (about 43,000) from 2002 to 2007 at the intersection of Peachtree Road and 25<sup>th</sup> Street. For the segment of Northside Drive between Spring Road and I-75, traffic counts have remained around 23,000 each year, with the exception of years 2002 (28,035) and 2005 (25,210). The traffic counts for Collier Road just west of Northside Drive have fluctuated between 12,640 and 15,405 between 2002 and 2006, but decreased drastically to less than 10,000 in 2007. The segment of Northside Drive between Wesley Drive and Sagamore Drive has continued to experience an increase in traffic counts from 8,857 in 2002 to 11,260 in 2006, with a slight decrease to 10,690 in 2007. Traffic counts for Peachtree Battle Avenue between Howell Mill Road and Woodward Way were estimated to be 12,980 in 2002, but when actually measured in 2003 and 2004, only totaled 4,309 and 5,099, respectively. No estimates were provided for 2005, but estimates for 2006 and 2007 are constant around 7,380 per year.

These traffic counts seem to suggest that despite the perception of increased traffic in the study area, traffic counts at designated collection centers have not significantly increased in recent years, but have in fact, decreased from earlier years.

Individual data for the segment of Peachtree Road (SR9) between Collier Road and Terrace Drive was provided for 2006. The data suggest that average traffic counts for weekdays is equal to the average traffic counts for Saturdays, and traffic counts for Sundays is about 25% less than the other days of the week. The average monthly traffic counts ranged from 35,316 in December to 42,454 in March. When looking at individual days, Sundays had the lowest number of traffic counts (32,926) and Fridays had the highest traffic counts (46,840), followed by Thursday (42,732).



**FIGURE 4.1 – GDOT Traffic Count Collection Device Locations**



		1. Peachtree Road at Biscayne Drive	2. Peachtree Street at 25 <sup>th</sup> Street	3. Northside Drive between Spring Road and I-75	4. Collier Road west of Northside Drive	5. Northside Drive between Wesley Drive and Sagamore Drive	6. Peachtree Battle Avenue between Howell Mill Road and Woodward Way
TC Number		5108	5106	5021	6078	5023	6074
Milepoint	Beginning	2.69	1.99	11.59	12.11	0.69	0.13
	Midpoint	3.29	2.31	11.85	12.74	1.61	1.7
	Ending	3.89	2.63	12.1	13.37	2.54	3.27
2007	AADT	39,670	43,140	23,840	9,540	10,690	7,380
	Count Type	Actual	Actual	Estimate	Actual	Estimate	Estimate
	Direction	North / South	North / South	No Direction	North / South	No Direction	No Direction
2006	AADT	40,390	42,190	22,380	13,010	11,260	7,380
	Count Type	Actual	Actual	Actual	Actual	Actual	Estimate
	Direction	North / South	North / South	No Direction	No Direction	No Direction	No Direction
2005	AADT	40,910	43,250	25,210	12,640	10,820	n/a
	Count Type	Actual	Estimate	Actual	Actual	Estimate	n/a
	Direction	North / South	No Direction	North / South	North / South	No Direction	n/a
2004	AADT	42,337	42,823	23,627	15,405	10,514	5,099
	Count Type	Actual	Actual	Estimate	Actual	Actual	Actual
	Direction	North / South	North / South	No Direction	No Direction	No Direction	No Direction
2003	AADT	50,607	43,111	23,206	12,890	9,954	4,304
	Count Type	Actual	Actual	Actual	Actual	Actual	Actual
	Direction	North / South	North / South	No Direction	No Direction	No Direction	No Direction
2002	AADT	39,930	43,316	28,035	13,243	8,857	12,980
	Count Type	Estimate	Actual	Estimate	Estimate	Actual	Estimate
	Direction	North / South	North / South	No Direction	No Direction	No Direction	No Direction

SOURCE: STARS Traffic Data, Georgia Department of Transportation (GDOT), 2007

## Crashes and Injuries

Peachtree Road (SR 9/US 19) is a six-lane undivided road with a 35 MPH speed limit, which is designated as a principal arterial. It carries approximately 42,000 motor vehicles per day. Many of the intersections with Peachtree Road are signalized. Other streets in the study area are two lanes and have speed limits of 30 MPH or lower. Collier Road is a collector street which carries approximately 10,000 vehicles per day.

In the years 2002-2004, there were 117 fatalities due to motor vehicle crashes reported in Fulton County, including those that involved non-motorists such as bicyclists and pedestrians. There were 16,250 injuries and over 36,000 cases of property damage. In 2006, the Atlanta Regional Commission ranked Peachtree Road from 25th Street to Peachtree Memorial Drive in their top ten "Hot Spots for Fatal Crashes in Fulton County" (Atlanta Regional Commission, 2007c), since two fatalities in the corridor was third-highest for the county. In the same report, Peachtree Road from the Buford Highway ramp to Peachtree Park Drive, and from Peachtree Park Drive to Lakeview Avenue were ranked second and third, respectively in the top ten injury "Hot Spots". These segments were respectively responsible for 281 and 279 injuries. In addition to crashes involving motor vehicles, Stutts and Hunter (1999), using emergency room data from California, New York, and North Carolina, have found that as many as 70% of bicycle-related injuries and 64% of pedestrian injuries did not involve a motor vehicle collision. However, involvement of motor vehicles generally increased the severity of injuries and the likelihood of fatality (Stutts and Hunter, 1999). As the leading cause of death for U.S. residents ages 5-44, motor vehicle fatalities are a large contributor to years of potential life lost (Centers for Disease Control and Prevention).

Development along this corridor and an increase in through travel would increase traffic volume of all types, which would be likely increase crashes. This could be mitigated with local area traffic management/traffic calming, change in mode share, and increased connectivity.

### Crashes: Motor Vehicle Occupants & Motorcyclists

Speeding and traffic volume have been associated with crash probability on urban roads, and design factors can influence speed and traffic volume. There is also fairly consistent data showing a correlation between the number of lanes and the probability of collisions (Greibe, 2003). Road width or lane width has a mixed effect depending on the presence other factors to regulate speed. Research has shown that there is lower risk of crash severity during peak travel - possibly due to slower travel speeds, and a higher risk of collision for motor vehicles traveling in the right-hand lane (Huang, 2008). Low street accessibility, a feature of the study area, has been associated with increased crashes (Ewing, 2003).

Motor vehicle use and crash data appear to be accurate, although some research has shown that seatbelt use tends to be overreported, and alcohol or other impairment tends to be underreported (Guo, 2007).

Three-way T- or Y-type intersections have been associated with higher crash severity, and in particular motorcyclists are at risk for more severe injuries resulting from a crash at a T-type intersection, particularly if the intersection is unsignalized (Pai, 2008). Speeding, darkness, and curving roadway appear to be important factors in motorcycle crashes; collisions with fixed objects near the roadway were not (Savolainen, 2007). Nearly all of the intersections in this study area are T-type.

Research is beginning to suggest that local transportation infrastructure design and circulation must be considered systemically. For instance, an isolated traffic calming element has a different effect from a system of traffic calming throughout a district. Redesign of an intersection may perform differently due to its context than predicted in modeling. Additionally, the number of access points will play a role in traffic function and the nature and frequency of crashes. Other

research indicates that daily traffic count (AADT) per lane is strongly positively correlated to crash frequency. Traffic volume is not equally distributed across the lanes along Peachtree Road so it is difficult to say how this could impact crashes.

Much of the research on motor vehicle collisions has focused on non-design characteristics, such as vehicle type, seatbelt usage, and weather. Of design-oriented studies, many have looked only at rural or freeway locations. Research that has been conducted on urban street design primarily focuses on traffic calming, lighting, or camera enforcement. The effectiveness of speed cameras and red light cameras is heavily debated. Overall, meta-analyses conducted by the Cochrane Collaboration have found that traffic control cameras do reduce the overall number of crashes and the severity of resulting injuries (Thomas, 1996; Wilson, 2007). Cochrane also found systemic traffic calming plans effective at reducing crashes. Additionally, one study in Texas determined that landscaping along urban arterials significantly reduced the number of collisions (Mok, 2006).

### **Crashes: Pedestrians**

A report published by the CDC in 2007 found that, in 2000–2004, pedestrian fatalities increased in the Atlanta MSA, even as they decreased elsewhere in the U.S. This report also noted that fatalities were higher in the “core” counties, that 398 pedestrians were killed in the region in that period, and that many of the fatalities occurred away from intersections, perhaps due to lack of pedestrian facilities. Males were more likely to be killed than females, Hispanics were more likely to be killed than non-Hispanics, and, contrary to U.S. trends, people between 15 and 55 were more likely to be killed than those 55 and over. Alcohol did not appear to be a factor in most cases (3.6 percent) (Beck, 2007).

Calculating a robust risk ratio for pedestrians, either overall or in a specific location, is virtually impossible due to the standard U.S. practice of counting average volume of motor vehicle traffic but not pedestrian traffic. Thus there is no way to compute risk or to determine factors which seem to affect risk to pedestrians, except to extrapolate from targeted studies conducted elsewhere. However, some pedestrian counting methods have been used successfully in other research and could theoretically be applied here to gauge before and after effects of existing and proposed conditions, or compare this area with other similar areas.

Ewing, Schieber, and Zegeer (2003) attempted to create a risk ratio using data from Census data which surveyed individuals' walking trips. However, this data has been found inaccurate. Virtually every trip begins and ends with a walking segment, even if that segment is a very short distance within a parking facility or from a bus stop, parking space, or bicycle rack. Ambulance users would be an exception to this statement. However, survey respondents typically identify their trips only by the mode used for the longest portion of the trip (i.e. car, bus, bicycle, or walking). Therefore, it must be expected that pedestrian activity will be underreported (Litman, 2003).

There are characteristics of the area which can contribute to crashes involving pedestrians. Peachtree Road is six lanes wide, and the speed limit is 35 MPH. More lanes and speed limits above 35 MPH have been associated with increased pedestrian fatalities (Paulozzi, 2006). Signalized crossings are far apart and most intersections are T-shaped or three-way. Driveways/access points are numerous, deceleration/acceleration lanes are used in some places, curve radii are large, and there are destinations on both sides of the road. However, there are relatively usable sidewalks along Peachtree Road and some of the side streets, including sections of Collier Road. Atlanta Regional Commission's 2006 report identified Peachtree Road from 25th Street to Biscayne Drive as the location of the fourth-highest rate of pedestrian-motor vehicle crashes (20 in the years 2002–2004) (Atlanta Regional Commission, 2006).

### **Crashes: Bicyclists**

Again, data regarding bicycle traffic is lacking, so risk ratios are not available. What is known is that characteristics of the roadway and its users can contribute to injuries and fatalities. Pucher and Dijkstra (2003) use distance traveled to calculate fatality rates in the U.S. and found that pedestrians and cyclists in the U.S. were 23 times and 12 times, respectively, more likely to be killed than car occupants (Pucher and Dijkstra, 2003)."

The Thunderhead Alliance, the national coalition of state and local bicycle and pedestrian advocacy organizations, estimated that approximately 0.6 percent of all trips in the Atlanta region are made by bicycle, of which 90 percent are men, based on 2005 American Community Survey data from the U.S. Census Bureau. Currently, there are no dedicated bicycle facilities in the study area. The Atlanta Regional Commission identified Peachtree Road from Peachtree Circle to Brighton Road as the fourth most dangerous location for bicyclists in 2002 to 2004, based on four crashes with motor vehicles that occurred along that segment.

The proposed BeltLine would introduce bicycle facilities shared with pedestrians but not motorists. Research has shown that women in particular prefer bicycle facilities separated from motor vehicle traffic, so female bicyclists could increase (Garrard, 2008). However, there would still likely be bicyclists using on-street facilities. The proposed Peachtree Corridor redevelopment would add bicycle lanes to Peachtree Road in the study area, although existing diagrams show that the proposed bicycle lanes are improperly located in relation to the proposed streetcar, thus exposing bicyclists to a higher level of injury risk.

Overall, many bicycle crashes do not involve a motor vehicle. Bicyclists may collide with a fixed object, another bicyclist, or a pedestrian, or they may fall due to pavement/ground conditions, mechanical failure, or other reasons. Collisions between bicyclists or with pedestrians can increase when cyclists travel on a multi-use path rather than on-street facilities. According to Stutts and Hunter (1999), 30 percent of bicycle injuries involved a motor vehicle crash, usually on the road but including some cases in parking lots or other locations. Of injuries that did not involve a motor vehicle, about half occurred in the roadway.

### **Perceptions**

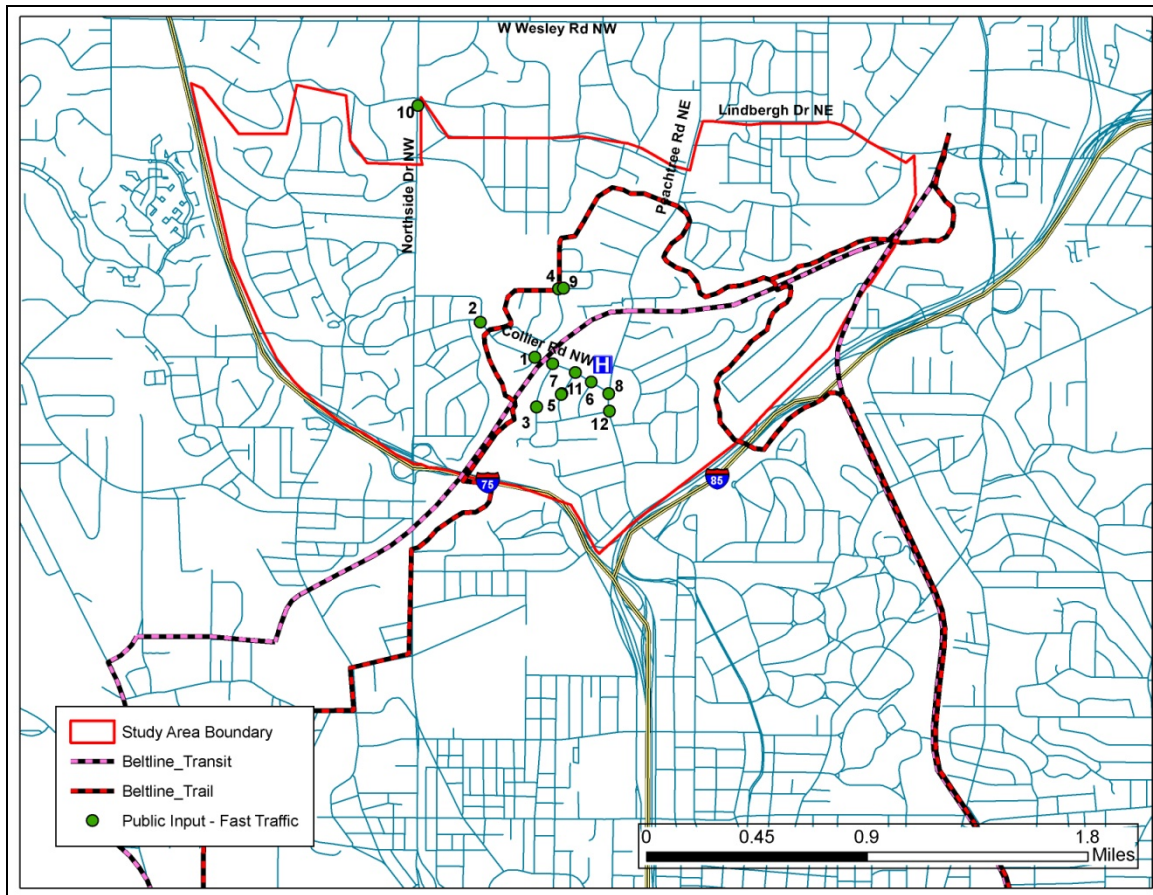
In the "Your Health and Your Neighborhood" survey conducted by the HIA team, the majority of residents claimed that automobile traffic within the study area was heavier than other neighborhoods, with almost 25 percent of respondents claiming traffic was "heavy traffic." When asked about how safe residents felt in their neighborhood, a majority of respondents (64.5 percent) claimed they felt safe from injury. However, residents responded that "fast automobile traffic" (57 percent) and "congested roads" (34 percent) contributed to residents' feelings of being unsafe in their neighborhood.

Although a large number of respondents (38.1 percent) identified Piedmont Hospital as being a positive impact, almost one-third of respondents (27.1 percent) stated the hospital had both a positive and negative impact on their health and quality of life. Residents identified traffic congestion as the major negative impact on their health.

Stakeholders were asked to identify areas with traffic problems on a map of the study area. FIGURE 4.2 shows the results of that input, with comments from stakeholders. Many of the problem areas identified were on Peachtree Road or Collier Road in the areas immediately adjacent to Piedmont Hospital.



**FIGURE 4.2 – Stakeholder Input on Traffic Problems in Study Area**



Map Number	Comment
1	Fast cars
2	Fast cars
3	SUV's speed over our speed bumps – also vehicles will pass me while I am trying to turn into my driveway which is on Ardmore Road
4	Drive too fast
5	Fast cut throughs
6	Traffic needs to slow down at T-intersection (Wycliff /Collier) for cars + peds
7	No left hand turn
8	Peachtree Collier – very difficult for pedestrians due to right turn on red (cars DO NOT slow down or stop)
9	Cars drive fast here and often on the wrong side of the road
10	Cars get mixed up with reversable lane – Head on collisions can + do occur
11	No left hand turn

SOURCE: Center for Quality Growth and Regional Development (CQGRD)



### 4.1.3 – Implications / Opportunities of New Projects

As presented earlier, there are many significant changes occurring in the study area. While some of these projects are transit-oriented (such as the BeltLine and the Peachtree Streetcar), other projects serve to redevelop the area.

The mixed-use developments currently being constructed along Peachtree Road will impact the automobile traffic along this major corridor. The requirement for developers to submit a Development of Regional Impact Report (DRI) to be reviewed by the Atlanta Regional Commission (ARC) and Georgia Regional Transportation Association (GRTA) is an effort to identify and address development impacts, including issues related to transportation.

The Brookwood, a mixed-use development currently under construction at the intersection of Peachtree Road and 28<sup>th</sup> Street, analyzed the Level-of-Service (LOS) for the area, including the intersection of Peachtree and Collier Roads, based on 2005, 2010, and 2030 am/pm peak volume data generated from Atlanta Regional Commission's Mobility 2030, the 2030 RTP, and the FY2006–2011 TIP reports (see FIGURE 4.3) (Atlanta Regional Commission and City of Atlanta, 2006).

According to the DRI (Atlanta Regional Commission and City of Atlanta, 2006) and shown in FIGURE 4.3, both northbound segments of Peachtree Road would continue to operate at a LOS C from 2005 to 2030, with slightly heavier traffic volumes occurring in the peak afternoon time. On the other hand, the LOS of Peachtree Road southbound would more directly change due to the time of day. For both southbound segments of Peachtree Road, the 2005 and 2010 morning peak LOS B would increase to an LOS C in 2030, and the 2005 and 2010 afternoon peak LOS C would increase to an LOS D in 2030.

In response to the unsatisfactory levels of service (LOS D) expected in 2030, transportation consultants made the following recommendations emanating from the DRI process:

#### **General**

- Adjust signal timing to accommodate shifts in traffic volume.

#### **Peachtree Road at Collier Road**

- At the exit lane of the proposed Peachtree at Collier development on the east side of Peachtree Road, add a westbound right-turn lane to accommodate existing traffic from the development to northbound Peachtree Road.
- Add southbound right-turn lane from Peachtree Road to westbound Collier Road.

#### **Peachtree Street at 26<sup>th</sup> Street/Huntington Road**

- Add northbound leading left-turn phase from Peachtree Street to westbound 26<sup>th</sup> Street.

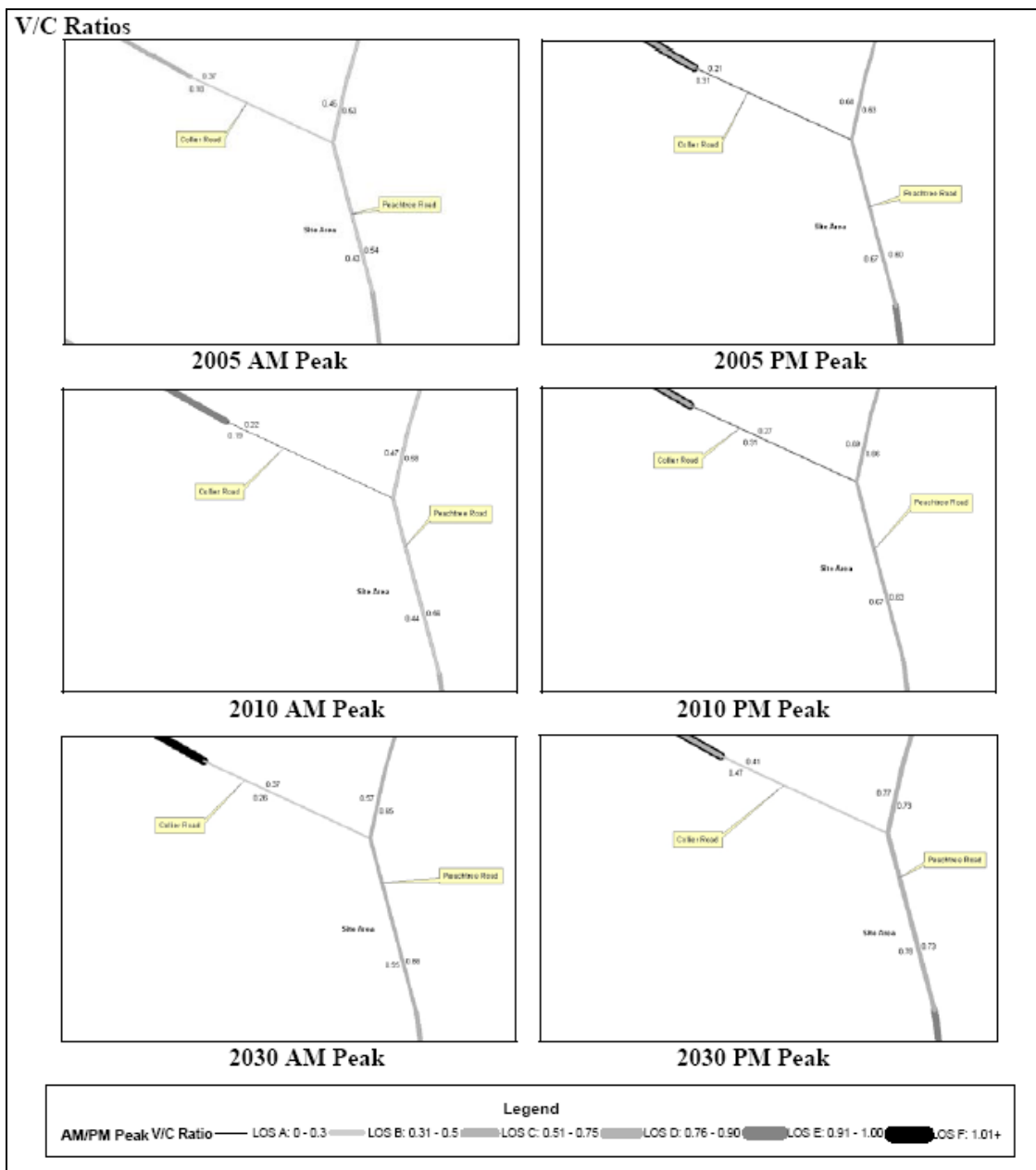
#### **Peachtree Road**

- Improve facility to an eight-lane roadway.

#### **Collier Road**

- Improve facility to a four-lane roadway.

**FIGURE 4.3 – Level-of-Service (LOS) of Roads Near The Brookwood Development**



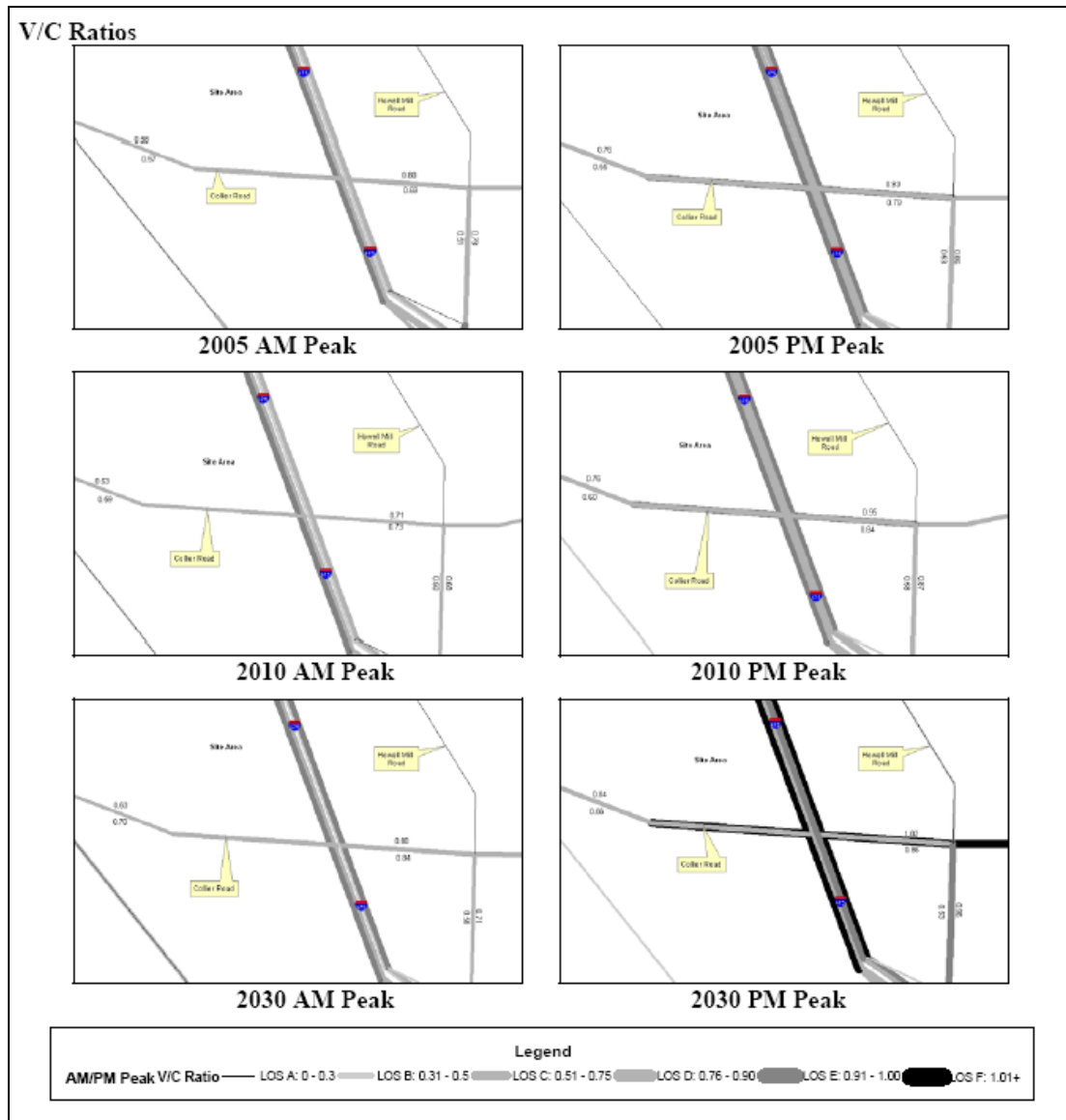
		PEACHTREE ROAD				COLLIER ROAD	
		Northbound		Southbound		Westbound	Eastbound
		South of Collier Rd	North of Collier Rd	North of Collier Rd	South of Collier Rd		
2005	AM	0.54	0.53	0.45	0.43	0.37	0.16
	PM	0.60	0.63	0.68	0.67	0.21	0.31
2010	AM	0.56	0.59	0.47	0.44	0.22	0.19
	PM	0.63	0.66	0.69	0.67	0.27	0.31
2030	AM	0.66	0.65	0.57	0.55	0.37	0.26
	PM	0.73	0.73	0.77	0.78	0.41	0.47

SOURCE: The Brookwood Development DRI, Atlanta Regional Commission and City of Atlanta, 2006

\* Where: LOS A (0–0.3): Free flow traffic; LOS B (0.31–0.50): Decreased free-flow; LOS C (0.51–0.75): Limited mobility; LOS D (0.76–0.90): Restricted mobility; LOS E (0.91–1.00): At or near capacity; and LOS F (1.01+): Breakdown flow.

The Collier Road Redevelopment is another mixed-use development proposed for a 13-acre site on Collier Road along I-75. Although this project has not yet started construction, phase I project build-out is expected for 2011. The development of this project would increase the 2005 LOS C for morning peak hours to an LOS D in 2010 and 2030, as well as increase afternoon peak hours from an LOS E to LOS F (see FIGURE 4.4) (Atlanta Regional Commission and City of Atlanta, 2007; Kimley-Horn and Associates, Inc., 2007b).

**FIGURE 4.4 – Level-of-Service (LOS) of Roads Near Proposed Collier Road Redevelopment**



LAND USE	AM PEAK HOUR	PM PEAK HOUR	24-HOUR
419 Apartments	209	248	2668
224 Condominiums	98	116	1274
55,050 sq ft Commercial Space	109	422	4208
Reductions	-	-286	-2999
<b>Total New Trips</b>	<b>416</b>	<b>500</b>	<b>5551</b>

SOURCES: The Collier Road Redevelopment DRI, Atlanta Regional Commission and City of Atlanta, 2007; Transportation Analysis: Collier Road Redevelopment, Kimley-Horn and Associates, Inc., 2007b

In an effort to address the unsatisfactory level of service related to background traffic expected in the area, transportation consultants suggested the following improvements for the area:

**Collier Road at Emery Street**

- Signalize this intersection.
- Add eastbound and westbound left-turn lanes.
- Coordinate the signal timing with signals at Collier at Howell Mill Road and at Beck and Howell Mill Road.

**Collier Road at Northside Drive**

- Add northbound right-turn lane.
- Add two northbound and two southbound through lanes.

**Beck Street at Howell Mill Road**

- Signalize this intersection.
- Add an eastbound left-turn lane.
- Coordinate signal timing with signal at Howell Mill Road at I-75 ramps.

**Collier Road at Howell Mill Road**

- Add an exclusive right-turn lane along Collier Road to accommodate increased traffic.

## 4.1.4 – Recommendations

The following actions are recommended:

**Traffic calming techniques**

- Redesign intersections to include traffic signals;
- Narrow roadways or lanes;
- Reduce number of lanes;
- Add medians;
- Add textured pavement;
- Add speed tables; and
- Change/add landscaping to discourage excessive speed.

**Separating or upgrading facilities**

- Mark bicycle lanes on road, including special blue bicycle lanes through intersections;
- Upgrade crosswalks and ramps;
- Install advance pedestrian and bicycle signals;
- Install visual and/or auditory warnings of approaching transit vehicles;
- Use hedges and/or other landscaping to distinguish facilities; and
- Establish wide, well-maintained pedestrian walkways.

**Changes in mode share**

- Reduce motor-vehicle traffic with transportation demand management (TDM) strategies; and
- Increase connectivity (see Section 4.2) to increase non-motor vehicle transportation options.

#### **Enforcement**

- Establish regular adequate patrols;
- Use traffic cameras to monitor speeds;
- Make sure utilities are properly maintained and repaired; and
- Monitor and enforce the no-siren zone.

#### **Other**

- Add appropriately-scaled lighting that can be maintained regularly;
- Install signage prompting safe activity; and
- Ensure adequate sightlines.

## **4.2 – Connectivity and Access**

Connectivity and accessibility are crucial elements to achieving a healthy community. Connectivity refers to an area's walkability and bikeability, and the ease with which a person may get to various destinations in the community. This travel may be done for recreation or to reach a destination more efficiently. The term access refers to an individual's or group's ability to find health-promoting goods, services, amenities, and opportunities at reasonable cost, in reasonable time, and with reasonable ease (Social Exclusion Unit, 2003). Access evaluation is concerned with both proximity of health-promoting amenities and the infrastructure and services that enable people to travel to these destinations. Numerous studies have shown that transportation, healthy food, and greenspace are critical to supporting good health (CQGRD, 2007). Specific health conditions associated with the lack of access to health-promoting amenities include obesity, diabetes, heart disease, poor mental and social health and poor physical condition (CQGRD, 2007).

In this section, we first discuss how connectivity and access affect community health. Next, we discuss how the study area ranks in connectivity and access, and how residents perceive the level of connectivity and access. Finally, we offer recommendations, both general and specific, as to possible changes to increase both real and perceived connectivity and access.

### **Physical Activity**

As mentioned above, physical activity refers to exercise, recreational activity, and activity that is a result of everyday life (e.g., transportation, labor, or chores). Having access to options for physical activity is crucial in cities. Health impacts related to poor physical activity levels include many chronic diseases, such as obesity, diabetes, cardiovascular disease, and some cancers (CQGRD, 2007).

Approximately 60 percent of the U.S. adult population is at risk for diseases associated with physical inactivity because they do not achieve the recommended 30 minutes of daily physical activity (National Institute on Aging, 2000), and 25 percent of all adults are completely inactive (Center for Chronic Disease Prevention and Health Promotion, 1999). Environmental and societal barriers to activity can include lack of access to infrastructure and services, economic limitations, and built environments that are unsafe and prohibit healthy activities (CQGRD, 2007).

For older adults, the design of the built environment is critical to their ability to remain mobile and engage in physical activity. Walking is the primary mode of transportation and exercise for older adults. The design and condition of the built environment, if poor, can render the elderly housebound (Emerine and Feldman, 2005). This issue is becoming increasingly relevant as the older adult population increases.



## Social Capital

As mentioned in the previous section, social capital is built both formally, through participation in group activities, and informally, through casual associations and encounters. It is the degree to which people feel that they live in and belong to a socially cohesive local environment, and the range of activities and resources that emerge as a consequence of those ties.

Research suggests that walkability, automobile dependence, mix of land uses, density, size of place, traffic volume, homogeneity, and presence of public spaces all impact social capital through their ability to create or support opportunities for formal and informal interaction. Walkability, which refers not only to the design of a public space or a neighborhood but also to aesthetics and feelings of personal safety, is positively correlated to social capital. Walkable neighborhoods are typically defined as those that have: a grid-street pattern, narrow streets, small lots, mix of uses, density, traffic calming, sidewalks and crosswalks, and the presence of parks, trails, and other public spaces (Ewing & Kreutzer, 2006). A study set in Portland, Oregon, found that having an interest in walking, opportunities for social interaction, and feeling safe while walking were all positive predictors of a sense of community. In addition, the study found that sense of community was more strongly correlated with recreational walking trips rather than destination trips (Ewing & Kreutzer, 2006).

Individuals with low social capital, who are not well integrated into the social, political and economic networks, have been shown to be at increased risk for poor physical and mental health (Kawachi, 1999; Hawe et al., 2000). In contrast, people socially engaged in their communities live longer and are healthier both physically and psychologically (CQGRD, 2007). Connectivity and access within a community are vital to encouraging the creation of social capital, which has been shown to lead to good health.

### 4.2.1 – Connectivity, Access, and Health

Connectivity and Access refer to the opportunity for people to be able to get to critical needs. These concepts take on many meanings in relation to the HIA study area:

- Connectivity and Access to transportation;
- Connectivity and Access to greenspace;
- Connectivity and Access to healthy housing;
- Connectivity and Access to healthy foods;
- Connectivity and Access to healthcare and health information;
- Connectivity and Access to jobs and education.

If health is the ability of an individual or group “to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (CQGRD, 2007), then access becomes a crucial part of health provision. This section will discuss the impacts on health of access to parks and trails, transportation facilities, amenities such as recreation facilities and providers of healthy food, and opportunities to take part in physical activity. It will also consider the effects of social capital on health.

As community residents navigate their daily life, their success in doing so is dependent on the availability of basic needs—food, shelter, water, medical treatment, and the goods, services, and income opportunities essential for full participation in the modern economy. Community design, nearby business activities, and institutional policies and practices often dictate the availability and convenience of these resources. These factors, in turn, can influence capacity for achievement and quality of life. The availability of healthy food, the amount of stress experienced in everyday life, the perceived vibrancy and connectedness of one’s immediate community, the degree of protection from environmental contaminants, the tools to maintain one’s health: these are just a few examples of the connection between opportunities and health.

## Connectivity and Access to Transportation

### Walkability and Bikeability

The relationships between transportation options and the physical environment, which includes both built and natural elements, has long been an important area of planning research. Many studies (CQGRD, 2007) have been done to better understand the relationships between land use and urban form characteristics, amount of travel, and the different modes of travel (walking, bicycling, public transit, personal automobile) (CQGRD, 2007). Recently, considerable interest has been generated around the potential connections between the health outcomes, the built and natural environment, and levels of physical activity, including walking and cycling (Jackson, 2002).

According to Dan Burden, Director of Walkable Communities:

Walkability is the cornerstone and key to an urban area's efficient ground transportation. Every trip begins and ends with walking. Walking remains the cheapest form of transport for all people, and the construction of a walkable community provides the most affordable transportation system any community can plan, design, construct, and maintain. Walkable communities put urban environments back on a scale for sustainability of resources (both natural and economic) and lead to more social interaction, physical fitness and diminished crime and other social problems. Walkable communities are more livable communities and lead to whole, happy, healthy lives for the people who live in them (Walkable Communities).

Thus it has become increasingly helpful to identify elements of the physical and natural environment that support or detract from walking. Planning policy and practice is constantly working to develop a standard for the definition of a "walkable" environment and there have been a number of efforts to test these definitions empirically (Partnership for a Walkable America, 2001).

Research has consistently shown that neighborhoods with more destinations and a greater variety of destinations within walking and cycling distance will see a corresponding higher level of non-motorized travel, especially for non-work trips (CQGRD, 2007). Work location is typically constrained and may be too far to reach by foot or bicycle alone. Obviously distance is many times the greatest barrier to walking for commuting purposes, but street connectivity and land-use mixes also heavily influence mode choice. In the CQGRD BeltLine HIA survey, about 90 percent of respondents stated that their job was too far to reach by walking or bicycling, although they did walk or bicycle to nearby stores and services (CQGRD, 2007). Distance and land use factors have also been found to affect the percentage of children who walk or bicycle to school (Ulfarsson and Venkataraman, 2008). Additionally, people tend to overestimate the distance to nearby destinations, which can affect their ultimate decision to walk to them (CQGRD, 2007). A short list of factors that can determine whether or not a person will choose to walk includes: weather, the walking environment, parking prices, social norms and influences, fitness of the individual, level of fatigue, variability in travel times, inconvenience of walking, car dependency for trip chains, enjoyment of walking, fear of crime, and concern for time (Walton and Sunseri, 2007).

The community must consider connectivity in terms of walkability and not just automobile access. Pedestrian facilities can include a walkway (such as a sidewalk or path), street crossings including signals, and amenities including a buffer area between the walkway and street, benches and trash cans, curb ramps, and lighting. Extensive, continuous, well-maintained sidewalk facilities are believed to be the most important factor in walking for both transportation and recreation (Clifton et al., 2007). Additionally, Ewing (2002) has compiled a list of ten elements that would constitute a “friendly walking environment”:

- Medium- to high-density land uses
- Mix of land uses
- Short- to medium-length blocks
- Transit routes every half-mile
- Two- to four-lane streets
- Continuous sidewalks, wide enough for two people to walk abreast
- Safe crossings
- Appropriate buffering from traffic
- Street-oriented buildings
- Comfortable and safe places to wait

Healthy communities should also be easily traversed by bicycle. Access to bicycle lanes and recreational facilities has been linked to increased inclination to bicycle and increased physical activity (Hoehner et al., 2005). In another case where trails were created on a former railway, bicycling increased in the area around the trail, and people living within 1.5 km (0.93 mile) of the trail increased their average daily time spent riding a bicycle (Merom et al., 2003). Overall, residents are more likely to bicycle when there are bicycle lanes and trails and less likely when many automobile facilities—such as parking lots—are present. On-street bicycle lanes can connect a multi-use trail to homes and destinations; these facilities are often recommended when less skilled bicyclists are expected. However, they must be continuous, maintained and enforced, and compliant with guidelines issued by the American Association of State Highway and Transportation Officials (Clifton et al., 2007).

### **Transit Options**

Access to transit has an indirect relationship with health. Many people rely on public transportation in order to participate in essential activities, such as going to work or accessing adequate healthcare (Joint Center for Political and Economic Studies and Policy Link, 2004; Chapple, 2001). One study in Atlanta found that labor participation rates increased in areas that had access to public transit (Sanchez, 1999; Adler and Newman, 2002). For many reasons, such as having a steady income and access to healthcare benefits, the employed generally have better health than the unemployed (Adler and Newman, 2002). Additionally, some studies have found that commuters who take transit to work are more physically active than those who do not, as a result of increased walking to and from transit (Wener and Evans, 2007).

A survey of the literature indicates that taking public transportation is highly linked to physical activity. In their 2005 study, Besser and Dannenberg (2005) found that Americans who use transit average 19 minutes of daily walking going to and from transit. Thus increasing access to transit could significantly increase the opportunities to be physically active, as most transit trips incorporate walking to and/or from destinations. The study also found that 29 percent of people walking to and from transit achieve the recommended level of 30 minutes of daily physical activity. The ability and likelihood of an individual walking to a transit station have been found to be affected by distance to station, density, number of parking spaces, grid pattern, physical quality of the environment, facility conditions, time, cost, and individual level factors (CQGRD, 2007). For individuals who do not live in walking or bicycling distance from their job, transit options can provide an additional travel mode alternative. Recent research in New York found that adding a commuter rail stop not only resulted in new riders who previously drove, but meaningful increases in the level of physical activity of existing commuters. They reported

increasing their total amount of activity during the week, in many cases enough to move them from the “insufficient” to “meeting recommendations” categories of physical activity (Greenberg and Renne, 2005).

For many communities, lack of access to transit has a relationship to physical activity levels. Those with no other option than to use their car for most trips, are more likely to default to using their car for all trips. Finally, the cost of transportation—19% of the average household budget in the Atlanta area—can reduce the amount of household funds available for health care or nutritious food. Cities with better transit typically have lower household transportation costs.

## **Connectivity and Access to Greenspace**

Parks and other greenspace provide opportunities for physical and social activity and can provide stress relief. As such, parks are an important component of urban areas, where smaller residential lots and greater densities increase the need for places for recreation, public gatherings, and exercise. Trails can also provide opportunities for physical health and recreation, as well as appreciation of natural resources.

### **Parks**

The physical activity literature suggests that a considerable amount of physical activity takes place in parks in many forms and by a variety of users. Individual characteristics (ethnicity, age, sex), location and access to parks (distance from home, transportation system, proximity of land uses), and the characteristics of the park itself (size, amenities, safety) all influence an individual's decision to use a particular park as well as the activities he or she engages in while at the park (CQGRD, 2007).

Parks are a popular place to be physically active. In a national sample, 29.6 percent of individuals who identified themselves as physically active reported that they exercised in parks (Brownson et al., 2001). Hoehner et al. (2005) studied how park use was related to meeting the Centers for Disease Control and Prevention/American College of Sports Medicine (CDC/ACSM) recommendations for physical activity. They found that compared to non-users, those that used the park 1–5 days per month were 1.2 times more likely to meet the recommended levels of physical activity, those that used the park 6–10 days per month were 2.1 times more likely, and those that used it more than 10 times per month were 4.3 times more likely to meet recommended levels (Hoehner et al., 2005).

Proximity to parks is often cited as a determining factor in the frequency of park visits and is related to physical activity levels. In 2006, RAND surveyed park users as well as households living within a two mile radius of twelve urban parks in Los Angeles (CQGRD, 2007). The study found that 81 percent of park users lived within one mile of the park, concluding that proximity was the most important determinant of park use.

Park accessibility, attractiveness, and perceived safety are also important factors in park use. Park accessibility is the combination of a variety of factors, including travel time, number of parks, cost, and available modes of travel, in addition to proximity (CQGRD, 2007). Cleanliness and regular maintenance will improve the general attractiveness of a park, although some specific uses, such as a playground or a dog park, may be viewed as attractive by some individuals but less attractive or even unattractive by others (CQGRD, 2007).

### **Trails**

Like parks, trails are also traditionally important places where physical activity occurs. In a national U.S. sample, individuals who identified themselves as active responded that they

engaged in physical activity on walking/jogging trails 24.8 percent of the time (Brownson et al., 2001). Several polls found in the CQGRD BeltLine study, have shown that between 13 percent and 20 percent of people state that walking and biking are their preferred modes of travel. Of those that had ridden a bike in the previous year, 46 percent said they would commute to work by bike if bike lanes were available, and 53 percent would commute by bike if there were dedicated paths (Rodale Press, 1992; Oregon Department of Transportation, 1995).

Trail use is often related to trail accessibility and other aspects such as connectivity, continuity, length of routes, presence of bike lanes, and signage. Connectivity of bikeways is an important factor that influences their use. In Eugene, Oregon, bike trip volume increased 76 percent where bikeways were connected (U.S. Department of Transportation, 1994). A study in rural Missouri highlights how influential walking trails can be. The study found that after walking paths were originally introduced, 55.2 percent of trail users increased the time they spent walking (Brownson, et al., 2000). Many people who were not previously walking for exercise reported they were now doing so; others who had been active increased their amount of activity because of the trail. Trails enhance connectivity, increasing linkages to other parks and greenspace.

Use of a trail depends on both the real and perceived distance to an access point to that trail. Also, having to cross a busy street or climb a steep hill drastically decreases the likelihood of trail use. Another big potential barrier to use is lack of knowledge regarding the existence of trails. Safety and fear of crime are often mentioned as barriers to trail use. While minor infractions (graffiti, littering, and damage to property) do tend to occur frequently along urban trails, severe crimes do not usually occur at high rates, making trails generally safer than other public spaces (CQGRD, 2007).

## **Connectivity and Access to Healthy Housing**

Housing has been identified as one of the main settings that affect human health. It not only provides adequate shelter, but according to the United Nations Habitat Agenda (1996) it:

also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost.

For the purpose of this report, housing is defined as “the conjunction of the dwelling, the home, the immediate environment and the community” (World Health Organization). This definition means that housing is not simply the residential unit or even the piece of real estate where it is located, but is instead the collective housing units, associated land uses, and social environment that compose a neighborhood. Therefore, for the purpose of the study area, healthy housing is concerned primarily with the housing unit and the neighborhood in which it is situated. A healthy housing unit is characterized as being in good condition, free from pollutants and excesses in noise, temperature, and humidity. It is safe and not overcrowded and is designed and maintained to reduce injury. Furthermore, a healthy neighborhood promotes active living through good design—appropriate density, land use mix, street connectivity, awareness of the human scale, attention paid to aesthetics—and by being safe and perceived as safe. A healthy neighborhood buffers inhabitants from unhealthful things, whether social, economic, or environmental; and provides affordable and appropriate housing choices for residents in all stages of life.



## **The Housing Unit**

Indoor air quality, temperature, humidity, noise, light, crowding, and general safety are all issues related to housing and health. Noise and light in relation to housing conditions can impact health. Noise can be caused by many factors, from the location of a house near a busy street, airport, or high-intensity institutional complex to crowded living conditions. The health impacts of noise are difficult to quantify, particularly when noise is an annoyance rather than excessive to the point of hearing damage. Research has found that the effects of noise manifest themselves differently among age groups. Symptoms for adults typically include depression and deterioration of the respiratory, cardiovascular, and muscular-skeletal systems. Children experience respiratory symptoms, while the elderly have an increased risk of stroke (Lavin, et al, 2006). Exposure to excessive or prolonged noise, such as in multi-family units with poor insulation, can lead to psychological stress and activation of the sympathetic nervous system (Krieger and Higgins, 2002). Lack of light, particularly exposure to daylight, has a negative effect on psychological well-being and can have a detrimental effect on learning and motivation.

Poor ventilation, cheap or old building materials, and inadequately functioning appliances can cause the release of toxic substances, such as carbon monoxide, nitrogen dioxide, asbestos, radon, polyvinyl chloride, pesticide residues, and volatile organic compounds that can contribute to a host of symptoms such as asthma, headaches, acute intoxication, lung cancer, hypertension, and bronchial obstruction (Krieger and Higgins, 2002; Jordan, 2006). Furthermore, indoor air quality is affected by outdoor air quality through typical levels of indoor-outdoor air exchange.

Housing design has an effect on the health of the inhabitants as it impacts the functionality of the housing unit for people of all ages and ability levels. The impacts can be physical, in terms of injuries sustained, or can be psychological, when the ability to function efficiently and effectively within the house and the neighborhood is reduced. Some issues with design have been addressed above. In addition, two groups for whom housing design is of utmost importance are older adults and those with disabilities. As people live longer, the number of individuals living with functional limitations and disabilities is on the rise (U.S. Census, 1997). Researchers and designers have developed a practice known as Universal Design, which is defined as the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (Mace, et al., 1991). The implementation of Universal Design in the construction of houses and the design of neighborhoods can promote livable communities that enable individuals of all ages and ability levels to function over time without segregation, loss of choice, lack of safety, increase in cost burden, or loss of mobility. These in turn have implications for the overall health and well-being of the inhabitants. More information on Universal Design is available in Appendix A.5.

## **Cost of Housing**

Where affordable housing is not available, more crowded living conditions may result. Crowded living conditions have also been associated with the transmission of respiratory infections, such as tuberculosis, and ear infections in children and even mold growth, as well as an increase in noise and lack of space for playing. In preliminary research, mold growth has also been linked with fatigue, depression, cerebral strokes, heart attacks, and hypertension (Lavin et al., 2006).

Lack of affordable housing can also impact a households' ability to pay for food or health care. Locating a greater distance from employment results in increased transportation costs that also can burden the physical, mental, and economic health of households. People are paying the penalty in time (spent traveling to and from work), money (spent on transportation costs), and health (stress and less time for health-promoting activities). Living further from jobs and services also results in an increase in vehicle-miles traveled (VMT), which increases traffic congestion, vehicle emissions, and crash rates. Emissions negatively impact air quality, causing associated health issues. Co-locating residences and employment centers has been shown to significantly reduce motor vehicle travel and costs.

### **The Neighborhood**

Through its impact on outdoor air quality, local temperature variation, noise levels, and sanitation (as discussed above regarding healthy housing), not to mention property values, the neighborhood setting plays a significant role in determining opportunities for a healthful life. The neighborhood also provides a setting for and access to opportunities for physical activity (see Section 4.1.1).

### **Connectivity and Access to Healthy Foods**

Access also refers to the convenient availability of healthy foods. A healthy diet is one that consists of fruits, vegetables, and whole grains and is low in fat, added sugar, and salt. Healthy diets are recommended for prevention of cardiovascular disease (Morland et al., 2002). Common dietary guidelines warn against unhealthy diets, which contribute to chronic diseases such as diabetes, hypertension, stroke, and certain types of cancer.

In Dunkley et al., (2004), a study of the City of Atlanta found that individuals usually choose to shop for groceries close to home, which means that competitiveness in price, quality, and service is not as important to consumers as proximity. Furthermore, this research found that accessibility is improved when more stores (often smaller stores) serve the market. In contrast, large stores (in Atlanta the Kroger, Publix, and Wal-Mart chains dominate the market) are usually placed on larger lot sizes in suburban, rather than urban, areas and frequently most easily accessed by car.

The neighborhood's role in supporting health is varied. For one, it can provide access to healthy foods and other health needs. Notably, the presence of grocery stores, food markets, and restaurants provide access to nutrition. Adults, teenagers, and children who live in a neighborhood which has a supermarket tend to have lower rates of obesity and overweight (Cummins and Macintyre, 2006; Morland et al., 2006; Sallis and Glanz, 2006; and Powell et al., 2007). Women who live closer to a supermarket have better diets during pregnancy which makes for healthier babies (Laraia et al., 2004). Additionally, proximity to a full-service supermarket increases residents' intake of fruits and vegetables, making them more likely to meet federal dietary recommendations (U.S. Department of Health and Human Services, 2001).

In addition to nutritional choices, access to pharmacies subsequently increases access to medications, and health clubs can increase opportunities for physical activity.

It has been suggested that commercial activities such as these do not thrive in a purely residential district. Rather, they require a minimum mixture of uses, particularly office or institutional uses, in their vicinity to drive traffic to them during business hours when residences are largely vacant. High-traffic corridors bring customers to these commercial enterprises throughout the day and night as well. The presence of an anchor institution can help secure amenities in the neighborhood by bringing customers to these commercial enterprises throughout the day and night.

### **Connectivity and Access to Healthcare and Health Information**

As described briefly in the section on anchor institutions, community hospitals commonly provide information and classes to the public on various health topics, as well as free or low-cost health services, such as disease screening and immunizations. In addition, hospitals attract other medical practices to the immediate vicinity. In this way, people who live or work near a major hospital can gain better than average access to health information and services, more convenient

access to medical care, and access to a wider choice of medical professionals. This access can result in better health outcomes.

Attendance at workshops on health and review of health literature typically improves “health literacy” (the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions), and individuals with better health literacy have been shown to have better health (Baker, 2006). Meanwhile, screening and early detection is linked to more effective treatment or prevention of many disorders including cancers, diabetes, and even mental health issues. Regular and convenient access to medical care also helps control or prevent disease. For instance, Moist et al. (2008) discovered that people who had to travel a greater distance to their dialysis treatment were at greater risk for dying and experienced worsened quality of life due to their health.

### **Connectivity and Access to Jobs and Education**

Another role of the community is to provide employment opportunities through the presence of businesses, from small to large. It is not common for urban residents to find employment very close to where they live; in fact, travel to work is typically the longest trip made each day. However, the neighborhood can provide some jobs to individuals who are looking for a constrained work opportunity, such as a teenager who is unable to drive or a stay-at-home parent who is flexible about the type of work they get and prioritizes a convenient location to their home.

A community may also promote educational opportunities. For instance, a higher tax base helps support the public school system, while private schools may be attracted to the area due to proximity to a major institution (and its employees, many of whom are also parents). Second, anchor institutions such as hospitals often have teaching and internship components.

### **4.2.2 – Assessment**

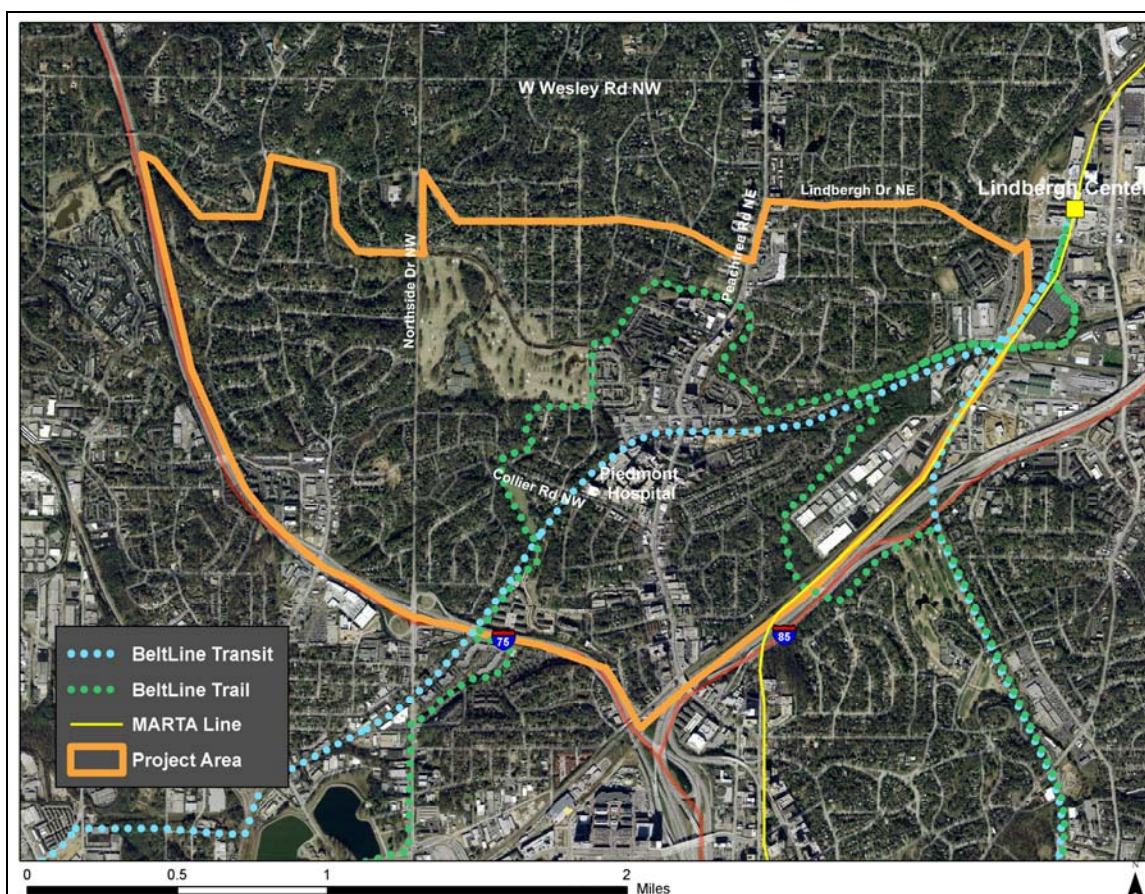
The HIA team used multiple tools to assess the connectivity and access of the study area:

- Utilizing GIS to illustrate and assess the connectivity and the access to walking routes, parks, greenspace and trails, transit, and grocery stores;
- Analyzing the actual vs. perceived connectivity and access as informed by community feedback;
- Performing a walkability audit and analysis.

### **Connectivity and Access to Transportation**

The following map (see FIGURE 4.5) shows the overview of the HIA study area, highlighting the street access and connectivity for walking, biking, and transit.

**FIGURE 4.5 – Access and Connectivity in the Study Area**



SOURCE: Center for Quality Growth and Regional Development (CQGRD)

### Transit Options

The MARTA rail line (in yellow) does not have a stop anywhere in the study area. The research shows us that the chances of people walking to this transit stop are very slim. There are currently two bus lines that run along Peachtree Road: one regular MARTA bus route and the MARTA Peach bus route. These buses are on alternating schedules. Although these buses are in close proximity to many of those living in the study area, they may not be considered accessible for many due to lack of connections or routing to the desired destination, time constraints, and concerns of safety. As is depicted on the map, the BeltLine does plan to add another line of transit that will also have stops in proximity to the study area.

### Walkability and Bikeability

The streets show a relatively good amount of connectivity in that streets are continuous and have connections in several places to other streets. Sidewalks run alongside roads in most places and are generally continuous with connections to other sidewalks. However, blocks are long compared to gridded cities such as New York or Chicago. These longer blocks can lead to greater real or perceived distances to destination, which can work to discourage walking and biking. A more complete look into the areas walkability and bikeability is found in the walkability audit later in this section.



There are currently no extensive networks of trails in the area, so walkers and bikers are very dependent on the road or sidewalk. This will, however, change with the addition of the BeltLine trail which is set to run through the area, as can be seen on the map. This and other changes brought on by the BeltLine will be discussed at length later.

## **Walkability Audit**

A large number of studies limit their measures of the environment to data that are readily available and comparable across U.S. locations through secondary sources, such as the U.S. Census Bureau (Crane, 1996; Berrigan and Troiano, 2002). These generally consist of measures of population or employment density, land use mix calculated by residential to employment ratios, and street network connectivity from street network files at some aggregate spatial unit such as zip code areas, traffic analysis zones, census tracts or block groups. Geographic information systems (GIS) now permit these land use and urban form variables to be computed at more disaggregate spatial units, such as buffer zones around an individual residence or destination, calculated at some radial distance (either straight line or network) from the location of interest. Despite these advances, it is likely the micro-features in the environment that largely shape how accommodating an area is for pedestrian travel. Because of the slow speed and nature of walking, a pedestrian is typically much more aware of and exposed to the environment than a driver. These features are likely to be important in determining behavioral patterns, but are rarely ascertained because of the difficulty in acquiring and accessing these data (Talen, 2002). For these reasons, the HIA team conducted a “walkability audit” of the study area to get a personal feel of what it is like to be a pedestrian in the neighborhood.

## **Methodology**

A walkability audit was completed on the morning of Tuesday, June 3, 2008. The study used the audit instrument referred to as the Pedestrian Environmental Data Scan (PEDS) (Clifton et al., 2007). PEDS was designed to capture a range of elements of the built and natural environment efficiently and reliably. The audit instrument (see FIGURE 4.6) includes a checklist of ranking criteria, as well as a detailed description of audit protocol. Each audit item was designed to assess individual elements of the built and natural environment with respect to pedestrian activity. Audit items include sections on the macro-scale environment, pedestrian facilities, road attributes, and the micro-scale features of the walking/cycling environment. In recognition that the overall quality of the walking (and cycling) environment may not be adequately reflected by the sum of the individual parts, four subjective evaluation items were added as a separate section to rate the environment as a whole.

The HIA team went out into the study area in two teams and followed a map of 30 road segments as highlighted in FIGURE 4.7. After walking across each segment, the team completed the audit checklist (see FIGURE 4.6) and discussed each of the criteria. Pictures were taken to document the teams’ findings and back up the conclusions. The full audit tool, segment map, and data sheets used for the audit are located in Appendix A.4.

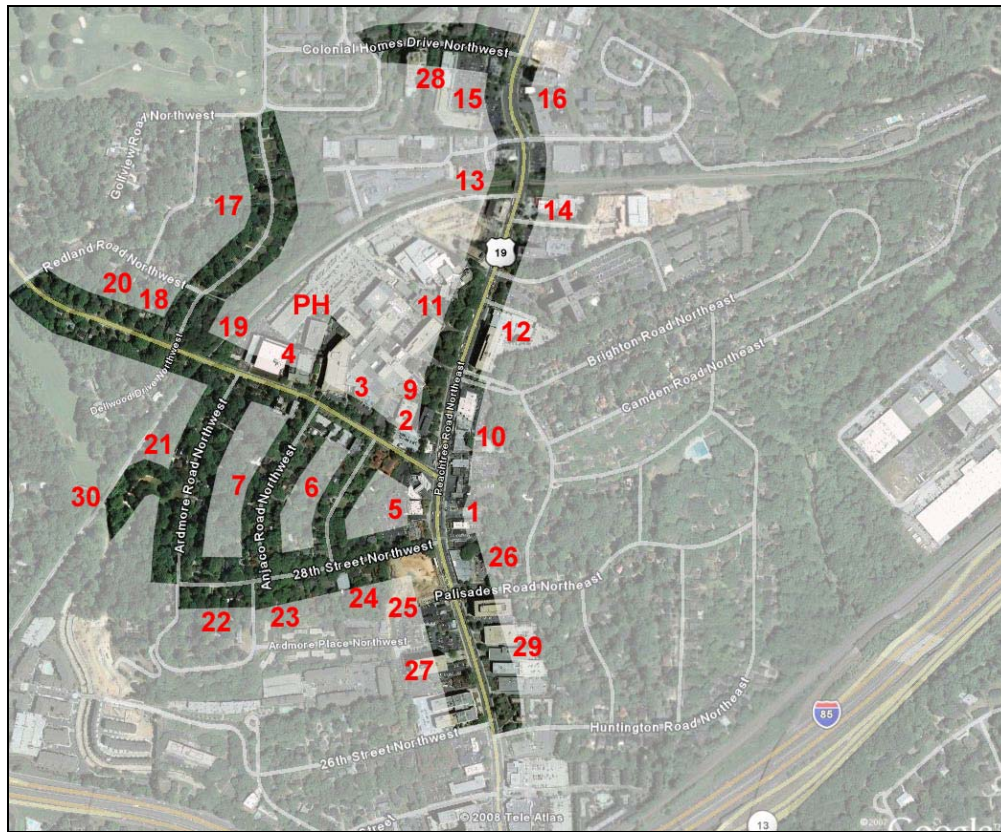


FIGURE 4.6 – Walkability Audit Data Sheet

<p>Name: _____</p> <p>Segment: _____</p>	<p>Date: _____</p> <p>Time: _____</p>	<p>Study Area: _____</p> <p>Weather: _____</p>						
<p><b>0. Segment type</b></p> <p>Low volume road <input type="checkbox"/></p> <p>High volume road <input type="checkbox"/></p> <p>Bike or Ped Path - skip section C. <input type="checkbox"/></p>	<p><i>If no sidewalk, skip now to Section C.</i></p> <p><b>11. Curb cuts</b></p> <p>None <input type="checkbox"/></p> <p>1 to 4 <input type="checkbox"/></p> <p>&gt;4 <input type="checkbox"/></p>	<p><b>24. Bicycle facilities (all that apply)</b></p> <p>Bicycle route signs <input type="checkbox"/></p> <p>Striped bicycle lane designation <input type="checkbox"/></p> <p>Visible bicycle parking facilities <input type="checkbox"/></p> <p>Bicycle crossing warning <input type="checkbox"/></p> <p>No bicycle facilities <input type="checkbox"/></p>						
<p><b>A. ENVIRONMENT</b></p> <p><b>1. Uses in segment (all that apply)</b></p> <p>Housing- Single Family Detached <input type="checkbox"/></p> <p>Housing- Multi-Family <input type="checkbox"/></p> <p>Housing- Mobile Homes <input type="checkbox"/></p> <p>Office/Institutional <input type="checkbox"/></p> <p>Restaurant/Café/Commercial <input type="checkbox"/></p> <p>Industrial <input type="checkbox"/></p> <p>Vacant/Undeveloped <input type="checkbox"/></p> <p>Recreation <input type="checkbox"/></p>	<p><b>12. Sidewalk completeness/continuity</b></p> <p>Sidewalk is complete. <input type="checkbox"/></p> <p>Sidewalk is incomplete. <input type="checkbox"/></p>	<p><b>D. WALKING/CYCLING ENVIRONMENT</b></p> <p><b>25. Roadway/path lighting</b></p> <p>Road-oriented lighting <input type="checkbox"/></p> <p>Pedestrian-oriented lighting <input type="checkbox"/></p> <p>Other lighting <input type="checkbox"/></p> <p>No lighting <input type="checkbox"/></p>						
<p><b>2. Slope</b></p> <p>Flat <input type="checkbox"/></p> <p>Slight hill <input type="checkbox"/></p> <p>Steep hill <input type="checkbox"/></p>	<p><b>13. Sidewalk connectivity to other sidewalks/crosswalks</b></p> <p>Number of connections _____</p>	<p><b>26. Amenities (all that apply)</b></p> <p>Public Garbage cans <input type="checkbox"/></p> <p>Benches <input type="checkbox"/></p> <p>Water fountain <input type="checkbox"/></p> <p>Street vendors/vending machines <input type="checkbox"/></p> <p>No amenities <input type="checkbox"/></p>						
<p><b>3. Segment intersections</b></p> <p>Segment has 3-way intersection. <input type="checkbox"/></p> <p>Segment has 4-way intersection. <input type="checkbox"/></p> <p>Segment has other intersection. <input type="checkbox"/></p> <p>Segment dead ends but path continues. <input type="checkbox"/></p> <p>Segment dead ends. <input type="checkbox"/></p> <p>Segment has no intersections. <input type="checkbox"/></p>	<p><b>C. ROAD ATTRIBUTES (skip if path only)</b></p> <p><b>14. Condition of road</b></p> <p>Poor (many bumps/cracks/holes) <input type="checkbox"/></p> <p>Fair (some bumps/cracks/holes) <input type="checkbox"/></p> <p>Good (very few bumps/cracks/holes) <input type="checkbox"/></p> <p>Under Repair <input type="checkbox"/></p>	<p><b>27. Are there wayfinding aids?</b></p> <p>No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/></p>						
<p><b>B. PEDESTRIAN FACILITY (skip if none present)</b></p> <p><b>4. Type facility (all that apply)</b></p> <p>Footpath (worn dirt path) <input type="checkbox"/></p> <p>Paved trail <input type="checkbox"/></p> <p>Sidewalk <input type="checkbox"/></p> <p>Pedestrian Street (closed to cars) <input type="checkbox"/></p>	<p><b>15. Number of lanes</b></p> <p>Minimum # of lanes to cross _____</p> <p>Maximum # of lanes to cross _____</p>	<p><b>28. Number of trees shading area</b></p> <p>None or Very Few <input type="checkbox"/></p> <p>Some <input type="checkbox"/></p> <p>Many/Dense <input type="checkbox"/></p>						
<p><i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i></p> <p><b>5. Path material (all that apply)</b></p> <p>Asphalt <input type="checkbox"/></p> <p>Concrete <input type="checkbox"/></p> <p>Paving Bricks or Flat Stone <input type="checkbox"/></p> <p>Gravel <input type="checkbox"/></p> <p>Dirt or Sand <input type="checkbox"/></p>	<p><b>16. Posted speed limit</b></p> <p>None posted <input type="checkbox"/></p> <p>(mph): _____</p>	<p><b>29. Degree of enclosure</b></p> <p>Little or no enclosure <input type="checkbox"/></p> <p>Some enclosure <input type="checkbox"/></p> <p>Highly enclosed <input type="checkbox"/></p>						
<p><b>6. Path condition/maintenance</b></p> <p>Poor (many bumps/cracks/holes) <input type="checkbox"/></p> <p>Fair (some bumps/cracks/holes) <input type="checkbox"/></p> <p>Good (very few bumps/cracks/holes) <input type="checkbox"/></p> <p>Under Repair <input type="checkbox"/></p>	<p><b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b></p> <p>Parallel or diagonal <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>	<p><b>30. Powerlines along segment?</b></p> <p>Low Voltage/Distribution Line <input type="checkbox"/></p> <p>High Voltage/Transmission Line <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>						
<p><b>7. Path obstructions (all that apply)</b></p> <p>Poles or Signs <input type="checkbox"/></p> <p>Parked Cars <input type="checkbox"/></p> <p>Greenery <input type="checkbox"/></p> <p>Garbage Cans <input type="checkbox"/></p> <p>Other <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>	<p><b>18. Off-street parking lot spaces</b></p> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">0-5</td> <td style="padding: 2px;">6-25</td> <td style="padding: 2px;">26+</td> </tr> <tr> <td style="padding: 2px; text-align: center;">1</td> <td style="padding: 2px; text-align: center;">2</td> <td style="padding: 2px; text-align: center;">3</td> </tr> </table>	0-5	6-25	26+	1	2	3	<p><b>31. Overall cleanliness and building maintenance</b></p> <p>Poor (much litter/graffiti/broken facilities) <input type="checkbox"/></p> <p>Fair (some litter/graffiti/broken facilities) <input type="checkbox"/></p> <p>Good (no litter/graffiti/broken facilities) <input type="checkbox"/></p>
0-5	6-25	26+						
1	2	3						
<p><b>8. Buffers between road and path (all that apply)</b></p> <p>Fence <input type="checkbox"/></p> <p>Trees <input type="checkbox"/></p> <p>Hedges <input type="checkbox"/></p> <p>Landscape <input type="checkbox"/></p> <p>Grass <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>	<p><b>19. Must you walk through a parking lot to get to most buildings?</b></p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p>	<p><b>32. Articulation in building designs</b></p> <p>Little or no articulation <input type="checkbox"/></p> <p>Some articulation <input type="checkbox"/></p> <p>Highly articulated <input type="checkbox"/></p>						
<p><b>9. Path distance from curb</b></p> <p>At edge <input type="checkbox"/></p> <p>&lt; 5 feet <input type="checkbox"/></p> <p>&gt; 5 feet <input type="checkbox"/></p>	<p><b>20. Presence of med-hi volume driveways</b></p> <p>&lt; 2 <input type="checkbox"/></p> <p>2 to 4 <input type="checkbox"/></p> <p>&gt; 4 <input type="checkbox"/></p>	<p><b>33. Building setbacks from street</b></p> <p>At edge of sidewalk <input type="checkbox"/></p> <p>Within 20 feet of sidewalk <input type="checkbox"/></p> <p>More than 20 feet from sidewalk <input type="checkbox"/></p>						
<p><b>10. Sidewalk width</b></p> <p>&lt; 4 feet <input type="checkbox"/></p> <p>Between 4 and 8 feet <input type="checkbox"/></p> <p>&gt; 8 feet <input type="checkbox"/></p>	<p><b>21. Traffic control devices (all that apply)</b></p> <p>Traffic light <input type="checkbox"/></p> <p>Stop sign <input type="checkbox"/></p> <p>Traffic circle <input type="checkbox"/></p> <p>Speed bumps <input type="checkbox"/></p> <p>Chicanes or chokers <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>	<p><b>34. Building height</b></p> <p>Short (1 to 3 stories) <input type="checkbox"/></p> <p>Medium (4 to 7 stories) <input type="checkbox"/></p> <p>Tall (8 + stories) <input type="checkbox"/></p>						
<p><b>22. Crosswalks</b></p> <p>None <input type="checkbox"/></p> <p>1 to 2 <input type="checkbox"/></p> <p>3 to 4 <input type="checkbox"/></p> <p>&gt; 4 <input type="checkbox"/></p>	<p><b>23. Crossing aids (all that apply)</b></p> <p>Yield to Ped Paddles <input type="checkbox"/></p> <p>Pedestrian signal <input type="checkbox"/></p> <p>Median/Traffic Island <input type="checkbox"/></p> <p>Curb extension <input type="checkbox"/></p> <p>Overpass/Underpass <input type="checkbox"/></p> <p>Pedestrian Crossing Warning Sign <input type="checkbox"/></p> <p>Flashing Warning Light <input type="checkbox"/></p> <p>Share the Road Warning Sign <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>	<p><b>35. Bus stops</b></p> <p>Bus stop with shelter <input type="checkbox"/></p> <p>Bus stop with bench <input type="checkbox"/></p> <p>Bus stop with signage only <input type="checkbox"/></p> <p>No bus stop <input type="checkbox"/></p>						
<p><b>Subjective Assessment: Segment...</b></p> <p style="text-align: center;"><i>Enter 1, 2, 3, or 4 where</i></p> <p style="text-align: center;"><i>1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly</i></p> <p>... is attractive for walking. <input type="checkbox"/></p> <p>... is attractive for cycling. <input type="checkbox"/></p> <p>... feels safe for walking. <input type="checkbox"/></p> <p>... feels safe for cycling. <input type="checkbox"/></p>								

SOURCE: Derived from the Pedestrian Environmental Data Scan (PEDS), Clifton et al., 2006.

**FIGURE 4.7 – Walkability Audit Segments**



Section	Segment Name	Begin Intersection	End Intersection
1	Peachtree Rd NE – East Side	28 <sup>th</sup> St S	Collier Rd NW
2	Collier Rd NW	Peachtree Rd NE	Wycliff Rd NW
3	Collier Rd NW	Wycliff Rd NW	Anjaco Rd NW
4	Collier Rd NW	Anjaco Rd NW	Ardmore Rd NW
5	Peachtree Rd NE – West Side	28 <sup>th</sup> St NW	Collier Rd NW
6	Wycliff Rd NW	28 <sup>th</sup> St NW	Collier Rd NW
7	Anjaco Rd NW	28 <sup>th</sup> St NW	Collier Rd NW
9	Peachtree Rd NE – West Side	Collier Rd NW	Brighton Rd NE
10	Peachtree Rd NE – East Side	Collier Rd NW	Brighton Rd NE
11	Peachtree Rd NE – West Side	Brighton Rd NE	Peachtree Valley Rd NE
12	Peachtree Rd NE – East Side	Brighton Rd NE	Peachtree Valley Rd NE
13	Peachtree Rd NE – West Side	Peachtree Valley Rd NE	Bennett St NW
14	Peachtree Rd NE – East Side	Peachtree Valley Rd NE	Bennett St NW
15	Peachtree Rd NE – West Side	Bennett St NW	Colonial Homes Dr NW
16	Peachtree Rd NE – East Side	Bennett St NW	Colonial Homes Dr NW
17	Dellwood Dr NW	Golf View Rd	Redland Rd NW
18	Dellwood Dr NW	Redland Rd NW	Collier Rd NW
19	Collier Rd NW	Ardmore Rd NW	Dellwood Dr NW
20	Collier Rd NW	Dellwood Dr NW	Redland Rd NW
21	Ardmore Rd NW	28 <sup>th</sup> St NW	Collier Rd NW
22	28 <sup>th</sup> St NW	Ardmore Rd NW	Anjaco Rd NW
23	28 <sup>th</sup> St NW	Anjaco Rd NW	Wycliff Rd NW
24	28 <sup>th</sup> St NW	Wycliff Rd NW	Peachtree Rd NE
25	Peachtree Rd NE – West Side	Palisades Rd NE	28 <sup>th</sup> St NW
26	Peachtree Rd NE – East Side	Palisades Rd NE	28 <sup>th</sup> St NW
27	Peachtree Rd NE – West Side	26 <sup>th</sup> St NW	Palisades Rd NE
28	Colonial Homes Dr NW	Peachtree Rd NE	S. Colonial Homes Cir
29	Peachtree Rd NE – East Side	26 <sup>th</sup> St NW	Palisades Rd NE
30	Tanyard Creek Park PATH	Ardmore Rd NW	None

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

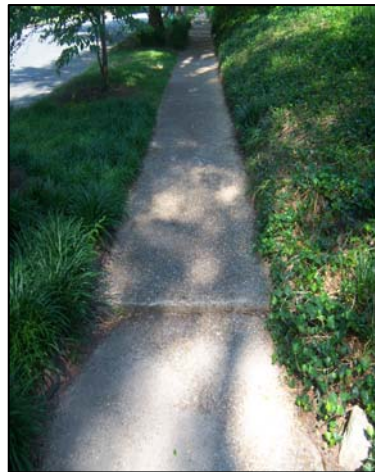
## Findings

### **28<sup>th</sup> Street (Segments 22, 23, & 24)**

The audit evaluated three segments along Ardmore Park's densely canopied 28<sup>th</sup> Street, an east-west, two-lane residential avenue connecting Peachtree Road with Ardmore Road. Concrete sidewalks, between 4- and 8-feet in width, are in good condition and line both sides of the street with no obstructions, except for a brief interruption near Peachtree Road at the Brookwood development site. Pedestrians benefit from a well-kept road buffer, also between 4- and 8-feet in width, landscaped with greenery and mature trees that greatly contribute to pleasantly shady conditions. On-street parking is prohibited during daytime hours, a feature that promotes safety by giving bicyclists adequate space and pedestrians clear sightlines for crossing. The road itself is in good condition and presents no significant threats to cyclists.



*Example of a good pedestrian environment: well-kept, highly shaded, flat, and separated from the roadway.*



*Examples of poor pedestrian conditions: although shady and separated from the street, these sidewalks are raised and broken and are narrow.*



*Closed sidewalk due to construction on The Brookwood condominiums.*

28<sup>th</sup> Street does, however, present some challenges to pedestrians and cyclists. The audit showed no posted speed limit signs, no crosswalks, and no crossing aids such as pedestrian crossing signs or "Share the Road" signs. The stretch includes two stop signs, but offers no further traffic control devices like speed bumps. And although sidewalks are in good condition overall, each segment along 28<sup>th</sup> Street contains sidewalks with a significant crack or break that would make passage in a wheelchair or pushing a stroller difficult, if not impossible. Two of the three segments feature slight hills that may further tax certain individuals. Finally, the presence of high-volume driveways near Peachtree Road poses risks to pedestrians, a condition that will intensify upon the completion of The Brookwood condominiums. The HIA team agreed that each of the segments along 28<sup>th</sup> Street is attractive and safe for cycling, and strongly agreed the street is safe and attractive for walking.



### Ardmore Road (Segment 21)

Ardmore Road, like 28<sup>th</sup> Street, is a tree-lined, two-way residential street that provides entry into the Ardmore Park neighborhood. Unlike 28<sup>th</sup> Street (and all other roads within the study area, for that matter) Ardmore Road contains no sidewalks, though it is heavily used for walking and biking. The street is commonly used by children, pet owners, joggers, and cyclists, as it links with a popular multi-use trail that provides access to a playground and Tanyard Creek Park.

The lack of sidewalks, crossing aids, and the presence of a steep hill provide challenges to pedestrians and bicyclists. These conditions combine to make walking and biking somewhat difficult and dangerous, especially considering that hurried motorists may use Ardmore Road as a cut-through between Collier Road and Peachtree.

In order to provide a safer environment for walkers, a concrete speed table has been constructed to slow vehicles, and a posted 20 MPH speed limit sign reminds drivers of Ardmore Road's residential context. The road, along with the surrounding homes, is in good condition and was graded as being attractive for walking and cycling, despite the lack of pedestrian or bicycle facilities.



*Lack of sidewalks force pedestrians and runners into the street.*



*The installation of traffic calming devices, such as concrete speed tables and posted speed limit signs, attempt to slow traffic on this residential road.*

### **PATH Trail (Segment 30)**

A multi-purpose trail, consisting of concrete and 10- to 15-feet in width, winds through a forested linear park from Ardmore Road to the Collier Hills neighborhood. It contains two clearly marked lanes and encounters no significant slopes, making the path ideal for walkers, runners, cyclists, children, and those with disabilities. Among its pedestrian-friendly amenities are a playground, benches, lighting, wayfinding aids, informative signage, and even dog waste-bag dispensers. An unmarked dirt footpath opposite the playground leads underneath a railroad trestle to the open field at Tanyard Creek Park. The trail and surrounding greenway provide its users with a welcoming and peaceful recreational environment, and were given the audit's highest marks for attractiveness and safety for both pedestrians and cyclists.



*Ideal pathway on the PATH Trail: wide, shady path with low slope and no automobile traffic.*

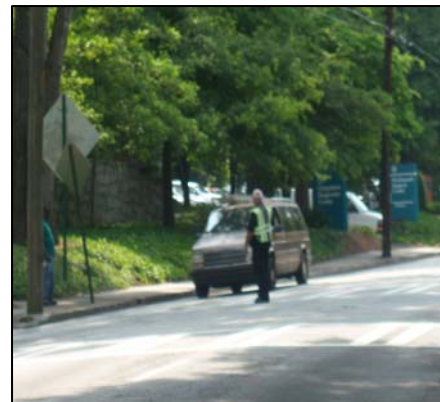


*PATH Trail provides many amenities to its users, including wayfinding signs, dog waste-bag dispensers, and lighting, as well as prohibiting automobile access from the path.*

### **Ardmore Park Interior Streets (Segments 6 & 7)**

Ardmore Park's low-volume interior streets, Anjaco Road and Wycliff Road, share many attributes of 28<sup>th</sup> Street, to which they each connect. Both of these interior segments feature densely shaded concrete sidewalks on each side, buffered from the road by landscaping and mature trees, with no observed obstructions like poles or signs. Pedestrians and cyclists must climb slight hills on these streets, and will encounter some significant breaks in the sidewalk as well as some bumps and holes along Wycliff Road.

As these streets approach high-volume Collier Road, the housing style transitions from single family detached homes to mid-size apartment structures. A higher volume of vehicles come and go from their parking lots, presenting a greater risk to pedestrians and cyclists. Each segment contains posted 25 MPH speed limit signs and pedestrian crossing signs. In addition, a crossing guard directs traffic and ensures pedestrian safety during the day at the junction of Wycliff Road, Collier Road, and Piedmont Hospital's entrance. The HIA team judged these segments to be very attractive and safe for biking, very attractive for walking, and safe for walking because of some sidewalk dips and cracks.



*In order to ensure pedestrian safety in crossing Collier Road at Wycliff Road (the Piedmont Hospital entrance), a crossing guard directs traffic at the most congested times of the day.*

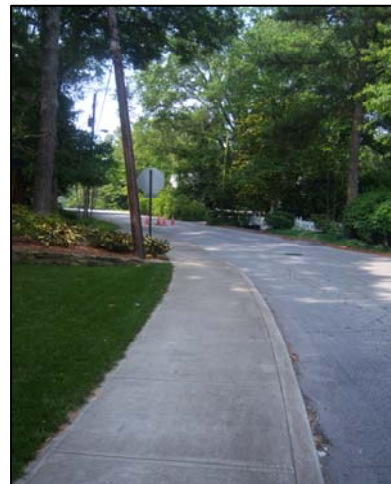




*Despite their attractiveness as densely shaded pathways buffered from the roadway by mature trees, sidewalks along these streets feature bumps and holes, decreasing their walkability.*

### **Collier Hills North (Segments 17 & 18)**

The walkability audit also evaluated two residential segments along Dellwood Drive NW, situated just west of the Piedmont Hospital campus in the North Collier Hills community. Both were classified as low-volume, two-lane segments characterized by single-family detached housing. They contained complete, standard-size concrete sidewalks on the east side of the street, in good condition, with no considerable obstructions. Stop signs and pedestrian awareness signs were observed in both segments of Dellwood Drive, in addition to a posted 25 MPH speed limit sign. Adequate tree cover also contributed to this section's positive pedestrian qualities.



*Despite being complete, shady, and in good condition, sidewalk conditions discouraging pedestrian walkability along these segments include no buffer between the roadway and the sidewalk and poor roadway conditions for bikers.*

Among those factors discouraging pedestrian and bicycle usage are the lack of buffers between road and sidewalk, no crosswalks, no bicycle facilities or pedestrian amenities, the presence of steep hills, and high voltage transmission lines overhead. Additionally, the HIA team noted some bumps and cracks in Dellwood Drive's surface that could disrupt a bicycle ride. The team strongly agreed the segments were both safe and attractive for walking, and expressed agreement that they were safe and attractive for bicycling.

### Collier Road: West Section (Segment 20)

The western segment of Collier Road is characterized by single-family detached housing with a complete, standard-size concrete sidewalk, in good condition, featuring grass and tree buffers more narrow than those found in Ardmore Park. The sidewalk on this segment of Collier Road has no obstructions. Additionally, pedestrians may access Tanyard Creek Park from the sidewalk via an empty gravel lot, though the way is not marked, nor is it easily accessed by wheelchairs or strollers.

Collier Road is a high-volume, two-lane road here, and the segment does not include safety measures such as crosswalks, crossing aids like pedestrian warning signs, or traffic control devices such as speed bumps or tables. It features no pedestrian amenities and is particularly unfriendly to cyclists, who must contend with high traffic without a bicycle lane. It does include a posted 30 MPH speed limit sign on either side of the road. The HIA team agreed that the segment is both attractive and safe for pedestrians, but strongly disagreed that it presents either attribute to cyclists.



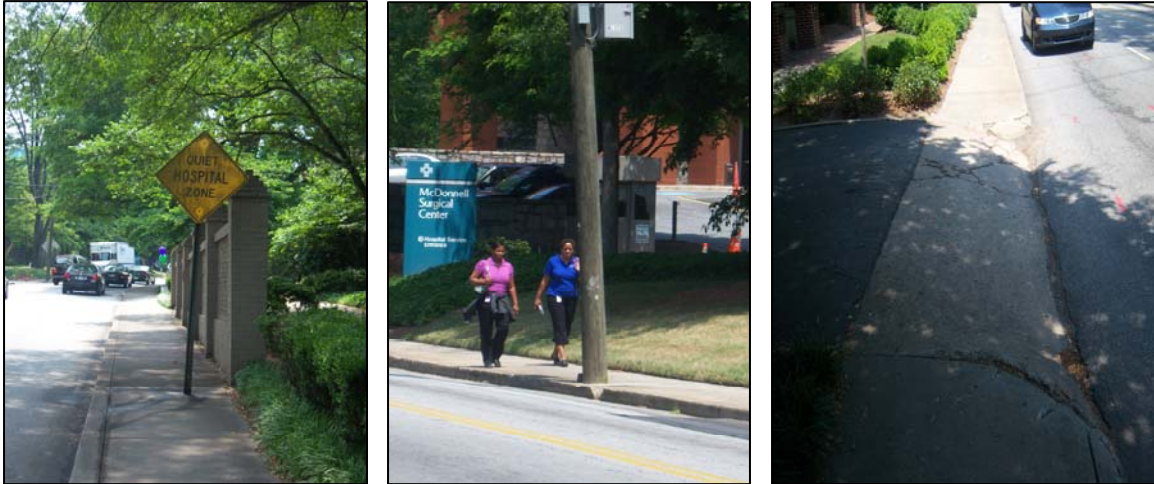
*Without a designated bicycle lane, bicyclists are deterred because they are forced to contend with automobile traffic. On the other hand, relatively attractive conditions exist for pedestrians.*

### Collier Road: East Section (Segments 2, 3, 4, & 19)

Piedmont Hospital's campus dominates this section of Collier Road near Peachtree Road, where the HIA team evaluated four segments with similar characteristics. Here, Collier Road contains two high-volume eastbound lanes and one westbound lane up to Ardmore Road, where the road transitions to just 2 lanes. This section's pedestrian facilities take on added importance, as they serve the hospital's potentially vulnerable clientele, in addition to a steady stream of hospital employees and visitors trekking to eateries along Peachtree Road.

The audit revealed a number of potential hazards to pedestrians and cyclists, including a number of sidewalk obstructions caused by fire hydrants, telephone poles, and signs. In addition, no buffer exists between busy Collier Road and the bumpy, cracked sidewalk, while several curb cuts disrupt the sidewalk leading to Piedmont Hospital. There are medium to very high volume driveways providing access to the hospital, and pedestrians must traverse parking lots to access some buildings. Team members also observed a large truck stray onto the sidewalk while turning onto Collier from Peachtree, and other tire marks there show it was not the first to do so. Walking conditions, therefore, can be dangerous, while managing a wheelchair would be treacherous.

The sidewalk opposite hospital grounds is also standard-size and concrete, in similar condition to the Piedmont Hospital side, and provides pedestrian access to several apartment buildings. There are no speed bumps or speed tables to slow traffic along Collier Road, but there are several crosswalks, pedestrian crossing signs, hospital wayfinding aids, and one crossing guard directing traffic during daytime hours. The road contains some bumps, cracks, and holes, and there are no pedestrian amenities or bicycle facilities. HIA evaluators strongly disagreed that the corridor is attractive or safe for cyclists, and expressed agreement that it provides safe and attractive conditions for walking in just two of the four segments.



*Poor pedestrian conditions exist near Piedmont Hospital including: high-volume traffic conditions, sidewalk obstructions, no buffer between the sidewalk and roadway, multiple curb cuts, and poor sidewalk conditions.*

### **Piedmont Campus (Segment 30)**

The HIA team also conducted a walkability audit of Piedmont Hospital's main entrance road off of Collier Road. This segment features exclusively institutional uses, including mid-size office buildings and parking structures. A concrete sidewalk between 4- and 8-feet in width is in good condition and offers amenities like pedestrian lighting, wayfinding signage, public garbage cans, benches, and a buffer comprised of landscaped grass and trees. The walk is highly enclosed, as buildings approach the edge of the sidewalk. Certain pedestrian safety measures are in place along the segment, such as stop signs, speed bumps, pedestrian signals, pedestrian crossing warning signs, and crosswalks.

Evaluators noted multiple curb cuts and high-volume driveways. The road showed no signs of bumps or holes, and no bicycle facilities were observed. The segment was deemed attractive and safe for walking, but not conducive to cycling.



*Piedmont Hospital has taken many actions to update conditions within the hospital campus to improve pedestrian walkability. There are multiple traffic calming conditions in place (stop signs, speed bumps, etc.), in addition to signage and signals for pedestrian crossings. Also, the sidewalks are in good condition, separated from the roadways with a landscaped buffer, and are complete throughout the campus.*



### **Peachtree Road: At Piedmont Hospital (Segments 9, 10, 11, & 12)**

Piedmont Hospital is the predominant feature of this section of the Peachtree Road corridor, which runs from the intersection with Collier Road to the intersection with Peachtree Valley Road. The section is primarily characterized by medical buildings, attractive landscaping, centralized parking, and a small amount of dining and retail. Here Peachtree Road slopes downhill in both directions from Brighton Avenue and the primary entrance to Piedmont Hospital, creating a fairly steep incline towards the north. The road is three lanes in each direction, plus a right-hand turning lane on the northbound side between Brighton Avenue and Brookwood Valley Circle. During the audit (conducted between 9:45 a.m. and 1:00 p.m. on a weekday), traffic was moderately heavy and consisted of a mix of passenger vehicles, freight and service vehicles, construction vehicles, buses, and ambulances. There was one speed limit sign which indicated a 35 mph limit.

Sidewalks were typically five to six feet wide, adjacent to or less than two feet from the roadway, with some obstructions from utility poles or boxes. On two segments, the sidewalk was separated from the travel lanes by on-street parking or a turning lane. Sidewalks in this section were rated in fair to good condition. A moderate amount of cracking or buckling was present and appeared to be due to construction activities. Additionally, there were some instances where the sidewalk surface had been patched, perhaps as a result of utility work, and these patches tended to result in bumps, divots, or unlevel areas. Several tripping hazards were observed. The section was not fully compliant with ADA accessibility guidelines as a result of missing or poorly-designed curb ramps, missing accommodations for the visually impaired, excessive cross-slope at driveways, and an inaccessible pedestrian signal button.



*Although good sidewalk conditions existed in most of the segments, certain parts of sidewalks were buckling, raised, or broken, and contained obstructions, such as safety cones and fence uprights, due mostly to the construction in the area.*



*Separated from the street by a large landscaping buffer, this Shepherd Center plaza provides nice greenspace for hospital employees and guests, yet is blocked from public use by fences and other landscaping techniques.*

Excluding the gas station, curb cuts were minimal: one or two per block, generally leading to parking on the side or rear of buildings. The Darlington apartment building has a large parking lot in front of their building which is accessed via a signalized intersection and shaded by mature trees. Building setback ranged from none to more than 50 feet with plazas or landscaping in front of the buildings (excluding the Darlington), although the public seemed to be discouraged from using these areas. There was a considerable amount of noise, traffic, and debris from the Shepherd Center construction site.

There were four three-way intersections in this section and one four-way intersection (taking the Piedmont Hospital driveway as an intersection leg). One of the three-way intersections was not signalized and did not have any marked crosswalks, although it was only approximately 200 feet from the next signalized intersection. In addition to the unsignalized

intersection, there were four more locations where marked crosswalks were missing in spite of a continuing sidewalk or a pedestrian signal. Further complicating pedestrian movement through these intersections, the pedestrian signal phase for crossing Peachtree Road did not illuminate automatically (rather, requiring pedestrians to press a button to request the “Walk” signal even if the traffic signal was activated for motor vehicle traffic on the adjacent side street). As a result, some pedestrians experienced delays of several minutes trying to cross Peachtree Road, while most chose to cross without the legal protection or signal duration information provided by a “Walk” signal. Lastly, nearly all of the motor vehicle traffic from side streets was turning onto Peachtree Road, resulting in continuous vehicle-pedestrian conflicts. Around lunch time, a police officer was stationed at the intersection of Brighton Avenue and Peachtree Road, and assisted pedestrians across this intersection.



*Pedestrians were observed along this segment traveling to and from the Piedmont Hospital / Shepherd Center campus, as well as other pedestrians utilizing the wide, shady sidewalks for exercise.*

There was a considerable amount of pedestrian traffic in this section. Pedestrians were observed travelling to or from the hospital, medical offices, construction site, and commercial uses, as well as public transit. Other pedestrians were observed travelling along Peachtree Road without accessing any of the uses. Where facilities were not optimal, pedestrians used alternative strategies such as cutting through parking lots, creating a footpath around obstacles, and maximizing their use of shady areas. Several individuals with apparent disability were observed near Piedmont Hospital, although it could not be determined if they were there as patients. Overall, the audit team determined this section to be marginally attractive for walking and bicycling, but did not find any part of it safe for walking and bicycling.

### **Peachtree Road: North of Piedmont Hospital (Segments 13, 14, 15, & 16)**

This section of the audit area runs along Peachtree Road north of Piedmont Hospital, from Peachtree Valley Road to Colonial Homes Drive. This section’s character is similar to a suburban arterial. There were again three through traffic lanes in each direction, but the presence of a wide deceleration lane between Colonial Homes Drive and Bennett Street, lack of landscaping and trees, one-to-two story buildings, billboards, and quantities of surface parking in front of most buildings contributed to a suburban nature. Curb cuts were more frequent, actual traffic speed was slightly higher, and few pedestrians were observed. This section was dominated by passage over the proposed BeltLine corridor, a strip mall, some large apartment buildings and a few restaurants. During the audit (conducted between 9:45 a.m. and 1:00 p.m. on a weekday), traffic was moderately heavy and consisted of a mix of passenger vehicles, freight and service vehicles, construction vehicles, buses, ambulances, and a few bicycles.





*The roadway, although in good condition, was extremely wide and somewhat curvy throughout this segment. Although sidewalks mimicked the street orientation with no buffer in between the two, sidewalks were often scattered with debris and dust and were essentially the same height as the roadway.*

Similar to the Hospital section, sidewalks were five to six feet wide, and adjacent to or less than two feet from the roadway, except for a small section adjacent to Houston's Restaurant which veered away from the roadway behind a tree. Again, there were some obstructions from utility poles or boxes, as well as newspaper boxes. There were one to four curb cuts per block, and several of them utilized a right-in, right-out design potentially resulting in higher speeds for turning traffic. One driveway improperly placed a curb into the sidewalk area, and another driveway improperly used tactile strips at its edges. The audit team ranked the sidewalk as good with one fair section, as there were some newer sections of sidewalk and some older sections with cracking and patching of the concrete surface. Finally, there were some areas where the curb was very low or flush to the roadway, increasing pedestrian discomfort and the risk of cars parking or driving onto the sidewalk, while putting visually impaired pedestrians at risk for walking into the travel lane.

There were several bus shelters in this section, although they created obstructions when accessing the sidewalk as well. Trees were mostly immature and pedestrian amenities were few. However, there were attempts at quality landscaping in front of two of the restaurants. Litter was minimal although some dirt and gravel was strewn on the walking route. No posted speed limits were observed. There are three three-way intersections, with missing crosswalks on two legs. Traffic and pedestrian signal functionality was the same as in the Hospital section, although one pedestrian signal request button was not functioning. Curb ramps were present although there were numerous ADA accessibility guideline violations including inadequate pathway clearance, missing or inappropriately used tactile strips, and insufficient landing pads at curb ramps. The audit team rated this section poorly on most measures of walking and bicycling attractiveness and safety.



*Uncharacteristic of this segment, the sidewalk condition along Houston's restaurant wove into the site, providing a landscaped, shady buffer from the wide and busy street condition of Peachtree Road.*

### Colonial Homes Drive (Section 28)

Colonial Homes Drive is located on the northern end of the area examined for this audit. This segment runs from Houston's Restaurant on Peachtree Road to the intersection of South Colonial Homes Circle. The section contains several large multi-family buildings including Heritage Place Condominiums, Wesley Townsend Apartments, and Colonial Homes Apartments (ranging from two to nine stories). There is also a two story strip mall. In spite of this development and its proximity to the busy Peachtree Corridor, it is a low volume road and carried little traffic during the audit. The street is extremely wide in the eastern half of this section.



*Colonial Homes Drive had fair walking conditions due to obstructions in the sidewalks (such as retaining walls), broken and uneven concrete and unsuitable changes in sidewalk grading at*

There is a continuous sidewalk that is at times concrete and at other times paving bricks or flat stone, four to five feet wide and in fairly good condition. There were some instances of broken pavement or utility structures. In two locations, the sidewalk narrowed to less than three feet to prevent disturbing the root area of a large tree, without additional accommodations for pedestrians such as a curb extension. As is seen in the pictures below, these trees provided shade along some stretches of the sidewalk. The benefit of this shade was well noted during the audit due to the bright noon sunlight and temperatures over 90 degrees. The western half of this section is unshaded and notably less comfortable for walking in summer weather. There is no speed limit posted; however, traffic is generally slow in the area. There are no marked pedestrian crossings in this section at all, which would generally only be a concern during times of higher traffic volume such as rush hour. The sidewalk is immediately adjacent to the roadway which results in a non-compliant cross-slope at driveways. Slope at the edge of driveways was not compliant in some locations either.



*Due to its lack of connectivity to other streets in the neighborhood, traffic was generally slow on this segment in spite of wide streets without traffic or pedestrian markings.*

Although it is generally a good area for both walking and cycling, there are a few challenges that are presented here. There is a steep hill on this street which could create a challenge for wheelchair users, older pedestrians or those with strollers, and bicyclists. There is a large amount of off street parking for the apartment complexes and stores, which has lead to the presence of many curb-cuts and some high volume driveways. Additionally, the shopping mall and one of the apartment buildings have no designated pedestrian access at all, forcing people on foot to seek a safe route across driveways and parking lots. The area is well maintained and mostly free from litter or graffiti. However, there is little enclosure for pedestrians as buildings are set far back from the street and spaced apart from each other. Blank walls face the sidewalk in several locations, creating a sense of isolation. Additionally, walking or biking at night may be an issue due to a lack of both pedestrian and road oriented lighting fixtures. Overall, the section was rated attractive and safe for walking and very attractive and safe for biking.

### **South of Piedmont Hospital: Peachtree Road (Segments 1, 5, 25, 26, 27, & 29)**

The southern section of the audit area runs along Peachtree Road south of Piedmont Hospital, from Collier Road to 26<sup>th</sup> Street. Here the character is that of an urban arterial, lined with office buildings, dining, and some retail. The area is currently experiencing residential construction as well. The length of this section is located on a slight hill that slopes down to the south. The hill is not steep enough to be a major impediment to walking or biking. As with the other sections of Peachtree, during the audit, traffic was moderately heavy and consisted of a mix of passenger vehicles, freight and service vehicles, construction vehicles, and buses. The road itself is in generally good condition. There is no speed limit posted anywhere in this area. In Segment 26, there is on street parking along the segment of commercial stores. The majority of parking is off street in surface lots and some parking structures. While much of this off street parking is to the side or rear of buildings, Segment 1 had a considerable amount of parking in front. This has lead to frequent curb cuts and some high volume driveways at office and restaurant locations, to the extent that one deceleration lane has been constructed and several police officers are employed in directing traffic at lunchtime. A busy gas station at the corner of Collier Road further confounds pedestrian movement.



*The width and high-volume traffic of Peachtree Road make pedestrian crossing difficult. Crossing guards serve to help the flow of traffic entering/exiting the fast-food restaurants along this segment, as well as help pedestrians cross Peachtree Road at the already-designated crosswalks.*

The sidewalk is concrete and in fair condition, with good patches followed by sections with several bumps and cracks. At times the sidewalk is right up on the edge of the road, while at other times there is a grass planting zone. In some locations, curb cuts are so wide and so frequent that the sidewalk is more like an implied route rather than actual infrastructure. In several locations the curb was flush with the roadway, creating a potential hazard for cars to park or swerve onto the sidewalk.





*Along parts of the segment, there are times that the sidewalk height is even with the roadway height, creating essentially a continuous curb cut, with no separation between pedestrians and automobiles.*

In several of the segments there were pedestrian amenities such as benches and trash cans to make walking more attractive. A number of the office buildings and restaurants had attractive landscaping, plazas, and good pedestrian access which created a pleasant walking environment. During the lunch hour, numerous pedestrians were present as they walked to nearby restaurants from offices, medical facilities, homes, and construction jobs. However, functionality of the pedestrian environment was not ideal. Challenges included sidewalk obstructions from poorly placed furniture and utilities, traffic signals optimized for motor vehicle traffic, other conflicts with cars, lack of shade, and impacts from the construction site such as noise, dust, and traffic. At 26<sup>th</sup> Street, vehicle-pedestrian conflicts were reduced by a prohibited turn on red, while at Palisades Road pedestrians had difficulty crossing behind turning vehicles.

On the whole, this section was rated as not attractive for walking, due in large part to the construction, some cleanliness issues, and the lack of trees. However, moderately safe in most parts, although less so in others. In terms of bikeability, the section was not attractive or safe for biking due to the amount of traffic.

## Connectivity and Access to Greenspace

There are currently several parks and areas of greenspace in the HIA study area. The addition of the BeltLine is set to create even more. Also, the BeltLine trail component will help to increase access to both current and new parks. The map below shows the current access to greenspace of residents in the HIA study area and the additional access that will come as a result of the BeltLine.

As is depicted in FIGURE 4.8, the HIA study area has great connectivity and access to parks. There is no real lack of access to parks, and the area is fairly easy to traverse. According to the literature, if these parks were used more often, and by more people, the level of the community's physical activity as a whole would increase. Another important factor in making sure parks are used by residents is finding out what kinds of amenities residents would most like to see in their parks. As mentioned earlier, what is important to one group (dog owners, senior citizens, families with young children) is not necessarily important to another. To achieve maximum park usage the parks should address the needs of those that live in the community.

The trails access is similar to that for parks. Like parks, people with trail access are those residing within a one-half mile distance of the trail. Unfortunately at this time there is little or no data available as to the entrance points and design of the BeltLine trail system. In nearly all cases of trail construction, there are designated entry points that allow access to the trail. Therefore, trail design and the location of entry points will have a significant impact on access to the proposed BeltLine trail and will significantly affect the number of people with access.

**FIGURE 4.8 – Access to Greenspace in the Study Area**



SOURCE: Center for Quality Growth and Regional Development (CQGRD)

### Connectivity and Access to Healthy Housing

The study area experiences some problems with noise, due to traffic on Interstates 75 and 85 and Peachtree Road, ambulances (with sirens) and helicopters arriving and departing Piedmont Hospital, and delivery vehicles. This can create localized noisy conditions for residents and other area users.

Pests, including insects and rodents, may be attracted to the food service establishments at the hospital and along the Peachtree Corridor, and therefore need to be controlled around restaurants, cafeterias, and stores selling food items. On the other hand, chemicals used in pest control are typically highly toxic. The type of pest control employed by stores, restaurants, office buildings, and Piedmont Hospital in the study area could impact the health of area residents, workers, patients, and visitors. Lack of pest control or inadequate pest control could expose individuals to disease and other contamination left by insects and rodents. However, extensive use of poisons or pesticides could have a harmful effect on those exposed to them, especially children. Integrated Pest Management (IPM) would control pests with the minimum use of harmful products.

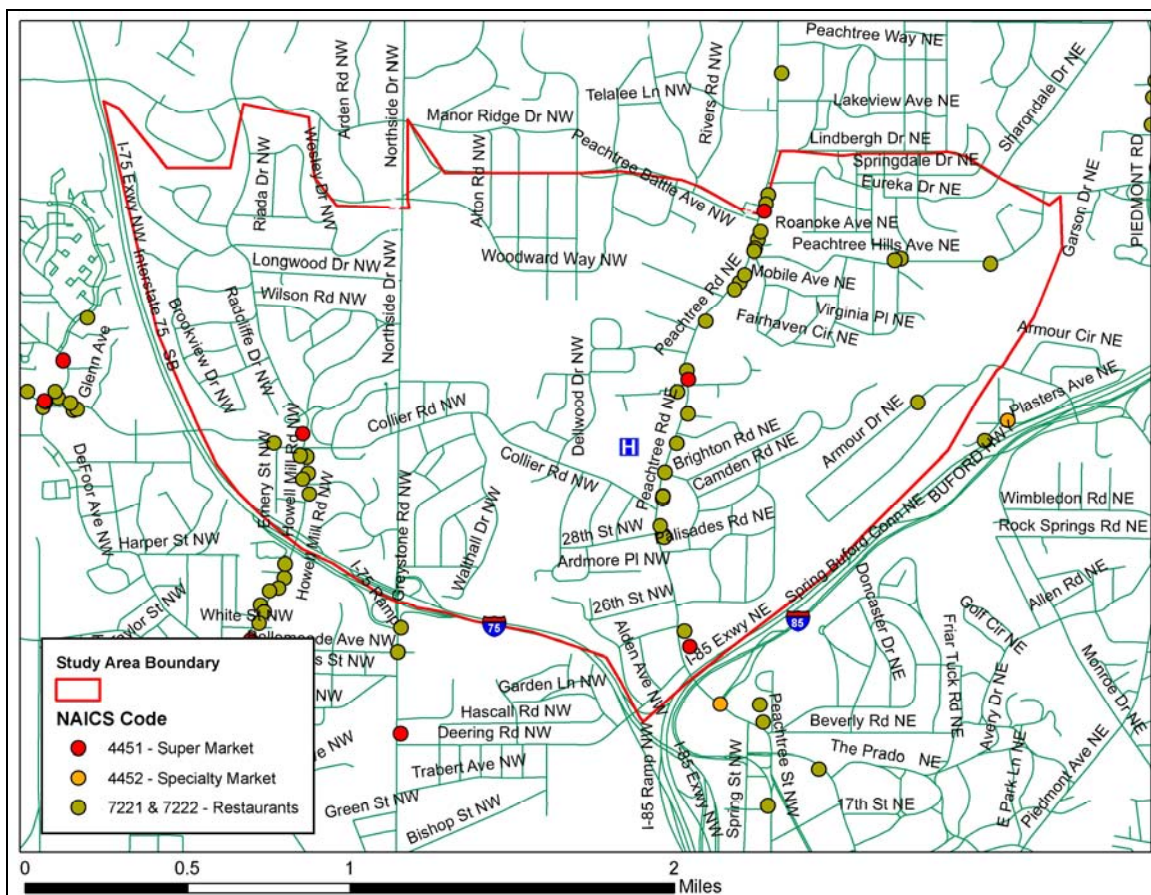


## Connectivity and Access to Healthy Foods

Residents have access to three major grocery stores within the study area, as well as multiple others directly outside of the study area and within walking distance. This is a great location in terms of access to healthy foods. Compared to other areas, the HIA Study Area is in one of the best possible locations in terms of access to chain grocery stores, and in turn, affordable healthy food options. It is possible to walk or bike to these stores for most residents in the study area, but whether they will choose to do so depend on other factors including time constraints, weather, and convenience.

As noted, the presence of Piedmont Hospital and the Peachtree Corridor in this area are major contributors to the availability of stores and services. Hospital staff, patients, and visitors patronize many of the businesses in the area bringing around-the-clock economic vitality that would otherwise be lacking. There are four supermarkets and 52 restaurants located within the study area (see FIGURE 4.9). They are primarily located on the Peachtree Road Corridor and in the commercial cluster that surrounds the intersection of Howell Mill Road and Collier Road. These two areas are also where the majority of the study area's commercial development is located (see FIGURE 4.10).

**FIGURE 4.9 – Study Area Supermarkets and Restaurants**



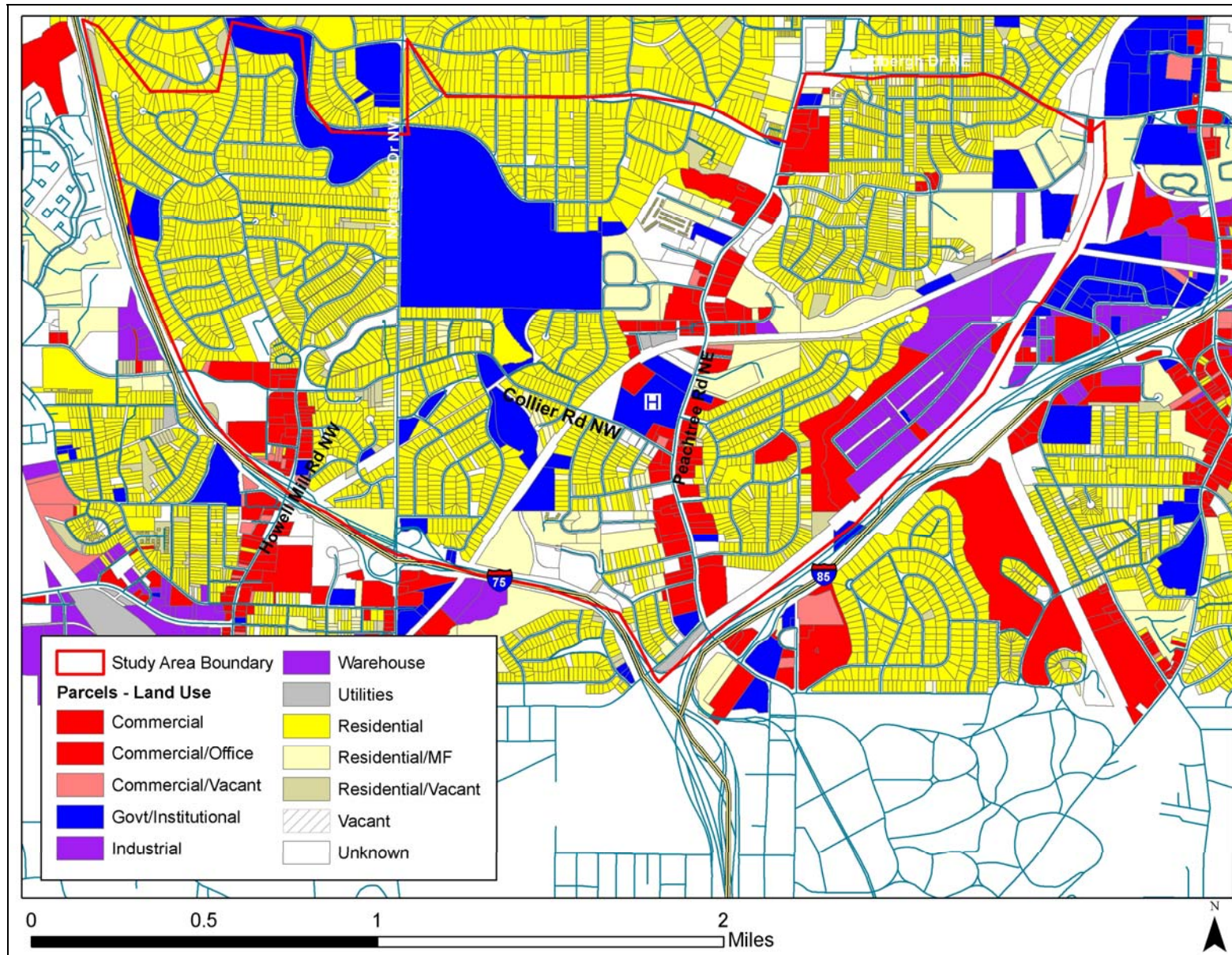
SOURCE: Data by Claritas BusinessPoint™, 2006;  
Map by Center for Quality Growth and Regional Development (CQGRD)

Twenty-three percent of the stakeholder survey respondents walked or biked to a grocery store at least once a month and over 5 percent walk or bike to a grocery store several times a week. Thirty-eight percent never bike or walk to the grocery store. Thirty-three percent walk or bike at least once a month to other types of stores and over 9 percent walked to another type of store several times a week. Over 17 percent never walk or bike to other types of stores. Thirty-four percent walk or bike to a restaurant or café at least once a month and over 7 percent walk or bike to a restaurant or café several times a week. Over 18 percent never walk or bike to a restaurant or café. In all three of these situations, respondents said sidewalks/sidewalk improvement and traffic calming are the two most important things that need to change in order for them to walk or bike for these trips more often.

The influence on affordability of housing in the study area is unclear. Many residents fear that the hospital and resulting traffic negatively affect their property values. On the other hand, the advantages of this area—convenient access to shopping, restaurants, and medical services—can increase the price of homes.



FIGURE 4.10 – Study Area Land Use



SOURCES: City of Atlanta Tax Digest 2006; Fulton County Parcel Data 2005

## Connectivity and Access to Healthcare and Health Information

Approximately 25 percent of HIA survey respondents stated that they go to Piedmont for their healthcare and although most have not used the emergency room, near-immediate access to emergency services is viewed positively.

In fiscal year 2007<sup>7</sup>, Piedmont Hospital contributed \$112,000 value in community meeting space, \$16,575 toward health club membership and fitness classes, \$220,000 in the community health information center, and \$826,494 for community services for older adults. In that same year, according to their own records, they provided over \$50 million in unreimbursed medical care to uninsured individuals (Piedmont Community Benefit Report).

Each year, Piedmont Hospital's community outreach program offers early detection and disease prevention screenings at no or low cost to the community, based on the belief that detecting a health problem in its early stages is often critical to successful treatment and outcome. Early intervention also conserves financial resources of the patient and the healthcare system as it is generally less expensive than treating late-stage disease.

During the 2007 fiscal year, Piedmont Hospital coordinated many programs for the community, including health fairs and health screenings, first aid tents and educational speakers. The Hospital also helped other not-for-profit healthcare organizations, such as the American Heart Association, American Cancer Society, Susan G. Komen for the Cure, American Stroke Association, and the American Diabetes Association realize greater accomplishments through sponsorships. In the past few years, Piedmont Hospital has also conducted events for cancer survivors and for skin cancer screenings, hosted special events around lung cancer and prostate cancer, and taken part in two major fundraisers in support of cancer research. It also conducted classes on cardiovascular health and healthy eating and provided cholesterol screenings.

Through the Diabetes Research Center, Piedmont offers glucose and diabetes screening, as well as classes on how to manage diabetes. Another resource, the Sixty Plus Older Adult Services, brings support to seniors, administers flu shots, and offers services such as an aging information helpline, nursing home guide, referrals, senior health outreach, and limited transportation services. Support groups include caregiver support groups, caregiver workshops, and dementia education and support programs. Educational classes and events include topics such as mature driving, diabetes, stroke prevention, pacemakers, arthritis, and grand-parenting among others. The hospital published two newsletters, Caregiver Newsletter and Senior Health News, which offered practical information and tips for seniors.

When requested and nursing resources are available, Piedmont Hospital provides onsite health fairs for free or at a subsidized cost to a number of local organizations, businesses, churches, and schools. Services offered include lipid profiles, blood pressure, blood glucose (diabetes), body fat, and weight assessments, as well as review and referral by registered nurses. Finally, Piedmont Hospital has a health and fitness club which is available to the public. Seven of the residents who responded to the HIA survey indicated that they were members of this fitness club.

A variety of lecture series, donated Health and Fitness club memberships to deserving individuals, nutrition workshops, an outreach coordinator, and an extensive community calendar round out their community services (Piedmont Hospital). What's more, patients at Piedmont Hospital can also benefit from the community setting, as in the case of the family who provides their family pet as a "Therapy Dog" at the hospital twice a month, according to their survey response.

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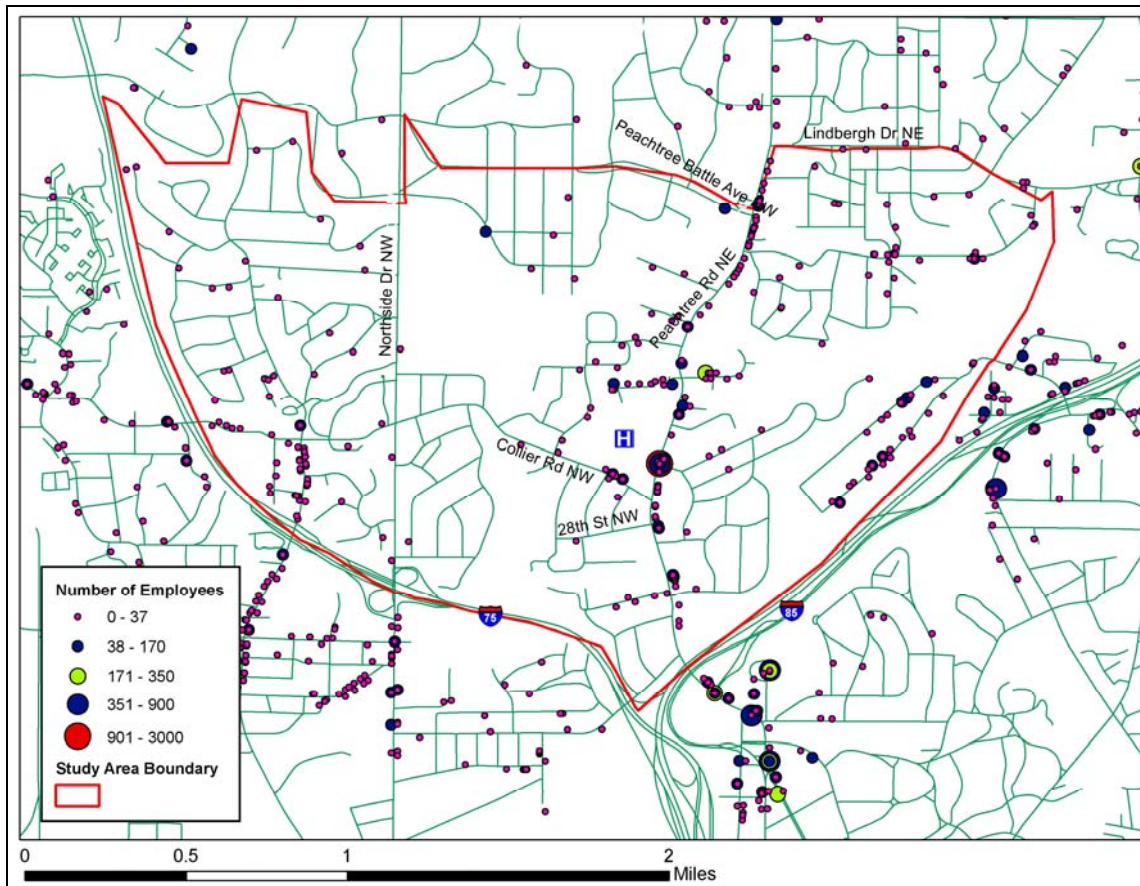
<sup>7</sup> Piedmont Hospital's fiscal year runs from July 1st to June 30th. FY2007 began on July 1, 2006.



## Connectivity and Access to Jobs and Education

Piedmont Hospital itself employs over 8,000 people (see FIGURE 4.11). It also conducts the Piedmont Nursing Scholars Programs in conjunction with Mercer University, in order to offset the shortage of qualified nurses in Georgia. The entire area employs approximately 11,900 people in office jobs, service and retail positions, construction jobs, medical services, and home offices. As FIGURE 4.11 shows, larger employers are primarily located on the Peachtree Corridor, but employers are located throughout the study area.

**FIGURE 4.11 – Number of Employees in Study Area**



SOURCES: Data by Claritas BusinessPoint™, 2006;  
Map by Center for Quality Growth and Regional Development (CQGRD)

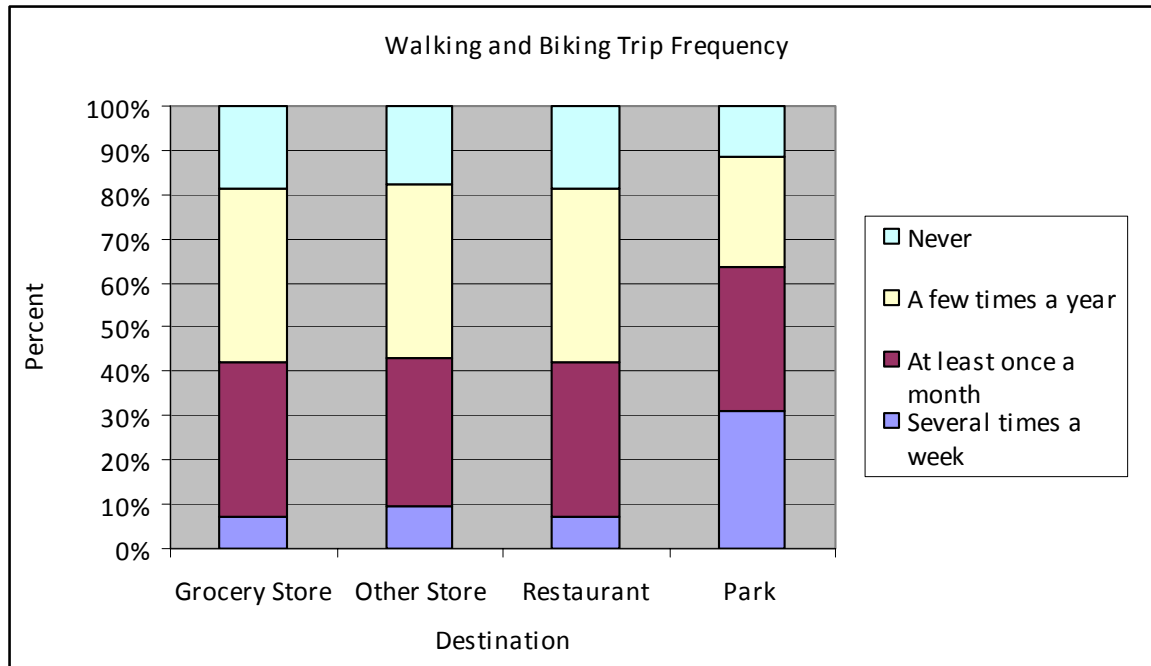
## Perceptions

Although the levels of connectivity and access look to be high in this area, the vast majority of residents report only walking or biking to their destinations only a few times a year, or never. In the “Your Health and Your Neighborhood” survey conducted by the HIA team, 92.9 percent of the total respondents said that from their home it was possible to walk or bike to the grocery store, and the same number reported that it was also possible to walk or bike to other types of stores (including pharmacies, book stores, clothing stores, specialty shops, etc.) However, over 56 percent of the respondents only do this either “a few times a year” or “never”. Similar numbers were reported also for residents’ ability to walk to a restaurant or café. When asked what would make them walk or bike to stores and other destinations more often the most common response



was sidewalk improvements (including putting sidewalks where there currently are none), other answers included traffic calming devices, better lighting, as well as other suggestions such as building a bridge to the Atlantic Station mixed use development. FIGURE 4.12 below illustrates the frequency that individuals who can walk or bike to destinations in their neighborhood actually do so.

**FIGURE 4.12 – Residents’ Frequency of Walking and Biking Trips**



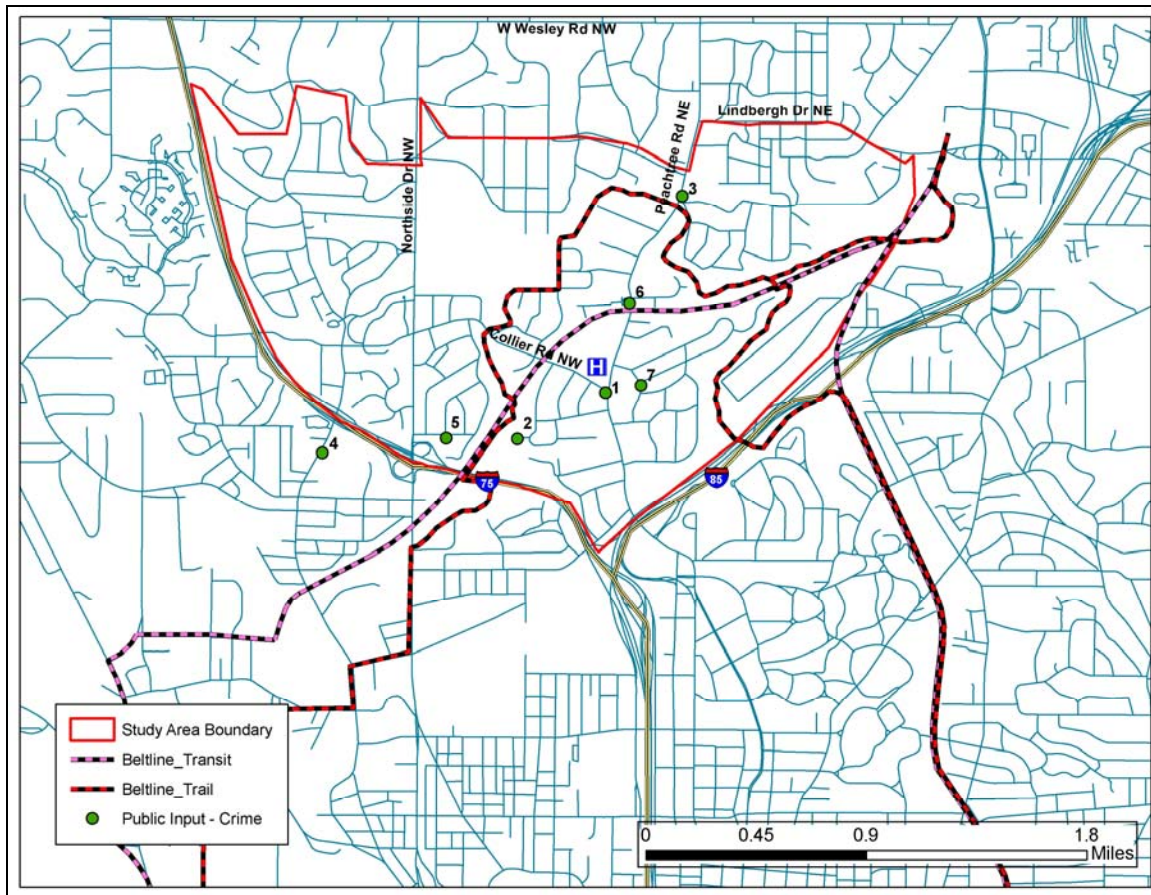
SOURCE: Calculations by Center for Quality Growth and Regional Development (CQGRD)

As the literature has shown, safety and attractiveness are key issues in determining the frequency at which people will utilize walking and biking routes whether they are streets, sidewalks, or trails.

From the HIA survey it is seen that the majority of residents feel relatively safe in their community, however there are others who report feeling unsafe. While many reported traffic related reasons for feeling unsafe, several others claimed that poor sidewalk conditions, poor lighting, and unattended animals were also threatening their perceptions of safety.

FIGURE 4.13 below shows where residents identified places that have been known to experience crime. In turn, residents feel less safe in these areas. This reduces the connectivity and accessibility because people are hesitant to traverse through these areas. Issues of crime must be addressed in order to fully maximize connectivity and access.

**FIGURE 4.13 – Crime Identified by Residents in the Study Area**

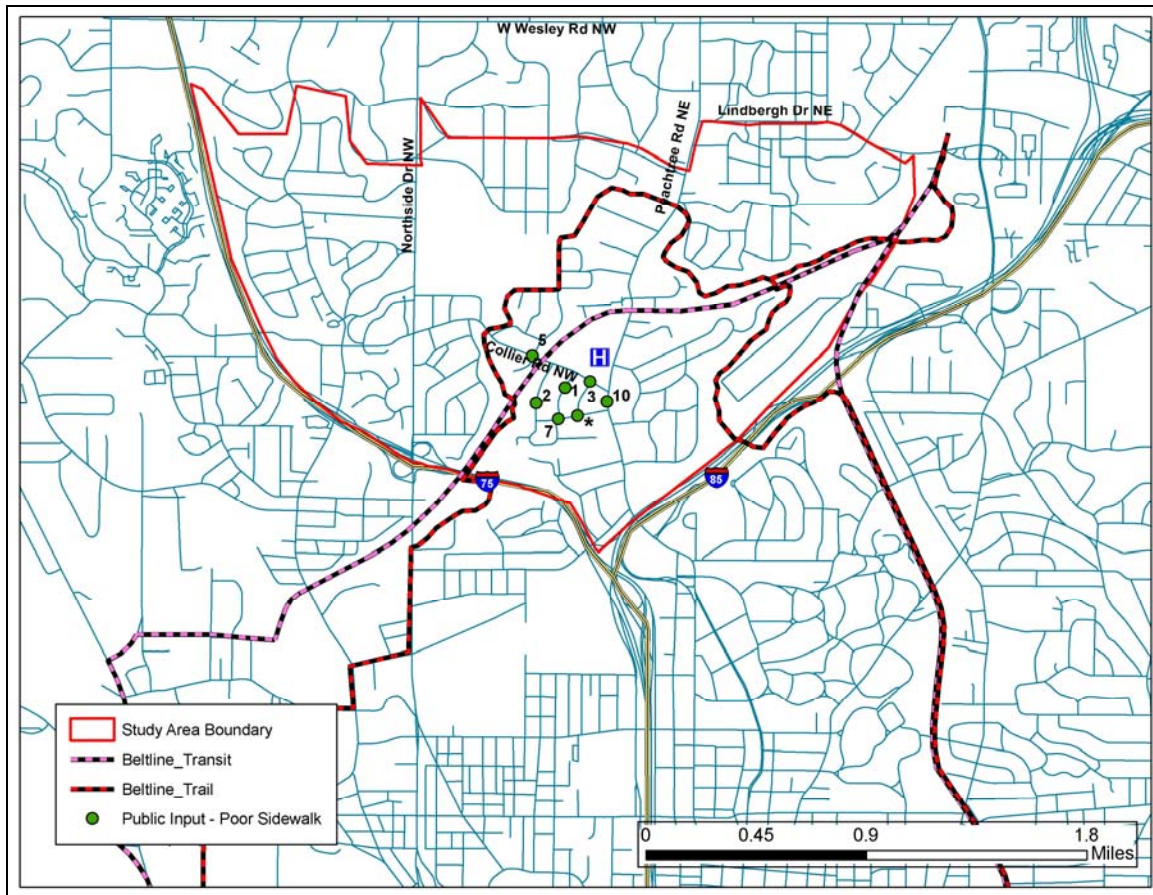


Map Number	Comment
1	Filling station is a hang-out for panhandlers
2	Busting windows of cars at park (to steal)
3	Carjacking has almost occurred here.
4	Kroger + Walmart parking lot unsafe
5	Numerous house break-ins from I-75 users.
6	Late-night, rowdy hangout
7	Parking in neighborhood, criminals following residents into neighborhood to rob them

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

Another key impediment to good access and connectivity is poor sidewalk conditions. FIGURE 4.14 shows where residents have identified there being undesirable sidewalk conditions.

**FIGURE 4.14 – Undesirable Sidewalk Conditions Identified by Residents in the Study Area**



Map Number	Comment
1	Broken Sidewalk
2	No Sidewalk
3	Trees overgrown into the sidewalk
5	Walking on Collier is unsafe/scary
7	Ardmore Park streets need repaired sidewalks
10	Too many ins + outs between 28th St + Collier with fast foods restaurants
*	No comment provided

SOURCE: Center for Quality Growth and Regional Development (CQGRD)

### 4.2.3 – Implications/Opportunities of New Projects

As discussed in previous sections, there are several changes happening all over the study area including the BeltLine Redevelopment Plan, the Peachtree Corridor improvements and the Atlanta Streetcar and Peachtree Streetcar. The BeltLine plans show that it will improve connectivity by with an elevated transit plaza and station at the BeltLine that would contain connections between the plaza and Peachtree Road above. Planners hope to take this increase connectivity a step further by linking this plaza with the proposed Peachtree Streetcar, making the node a vital connection point in the city's transit strategy.

As is shown on the previous maps, the access to parks, trails, and other greenspace will drastically improve once the BeltLine is completed. There are currently no trails accessible directly from the study area, but this will be changed with the addition of the BeltLine linking with the PATH Foundation's Northside Drive Trail, and adding another multi-purpose trail across the town green, providing increased access to trails, and in turn, letting the trails create increased walkability and access to other destinations. Street improvements within the study area are also part of the Redevelopment Plan. It advocates the creation of new streets, where possible, to shorten the connection between existing streets and to reduce block sizes to more walkable dimensions.

The Peachtree Corridor study emphasizes enhancements that will improve access, provide enjoyment, and ensure safety for pedestrians and bicyclists. Corridor planners believe a dedicated curbside bicycle lane will promote Peachtree as a recreational corridor for cyclists and encourage the bicycle as an alternate mode of transportation. Also recommended are wide sidewalks, planting and furniture zone buffers, and handicap facilities for the safety and comfort of pedestrians. The study notes that such accommodations would provide much-needed access to Piedmont Hospital, as well as to retail, offices, and the BeltLine. The increased pedestrian activity will increase demand for public spaces, a need that Corridor planners believe could be met by transforming Piedmont's front lawn into a green space with existing tree canopies, new walkways, plazas, seating areas, public art, water features, and garden space.

The Atlanta and Peachtree Streetcar plans show that they would be a new option for transit that would provide increased access to and from the HIA study area. In addition to these major projects that will be changing the face of the neighborhood, there will also be other changes to the neighborhood via general new construction. Although the number of building permits issued for commercial uses were recently very low, with fewer than five issued between 2000 and 2008, this still shows an increase in number of possible trip destinations.

## **4.2.4 – Recommendations**

Peer hospitals have used transportation to address access issues. Children's-Pittsburgh works with the Community Development Corporation to create incentive programs that would enable staff to purchase homes close to the hospital. And several hospitals, including BC Cancer, Spaulding, and Palomar, have made arrangements with their local jurisdiction and the transit agency to reduce their parking needs (and even get parking requirements waived) by negotiating for better transit service to their facilities—benefitting residents and other employees in the area as well.

### **Key Improvements**

- Improve quality of sidewalks;
- Increase number and quality of crosswalks, especially in those areas with high levels of pedestrian traffic;
- Increase and maintain lighting for pedestrians; and
- Implement traffic calming measures to reduce traffic volumes and speeds.

### **Pedestrian Education**

- Use wayfinding signage to inform pedestrians of their route options; and
- Conduct outreach within the community to make residents familiar with new walking and bicycling options.

### **Reducing Hospital Emissions and Pollutants**

- Modify building materials used in future construction projects;
- Use alternative-fuel vehicles whenever possible;
- Promote non-motorized and public transportation modes; and
- Use more environmentally-friendly incineration methods.



# **Section 5:**

## **Key Findings and Recommendations**

KEY FINDINGS	RECOMMENDATIONS	RELATIONSHIPS		
		Traffic	Access	Connectivity
Traffic				
Traffic volumes, which already inhibit pedestrians and bicyclists and contribute to air pollution and noise levels, can be expected to worsen as new development of the study area continues. Key actors within the area, including Piedmont Hospital and the City of Atlanta, should take steps to mitigate the potential negative health impacts of traffic increases.	<ul style="list-style-type: none"><li>Implement traffic calming measures, including:<ul style="list-style-type: none"><li>Redesign intersections to include traffic signals;</li><li>Narrow roadways or lanes;</li><li>Reduce number of lanes;</li><li>Add medians;</li><li>Add textured pavement;</li><li>Add speed tables; and</li><li>Add or upgrade landscaping to discourage excessive speed.</li></ul></li></ul>	X	X	X
	<ul style="list-style-type: none"><li>Separate and/or upgrade facilities, including:<ul style="list-style-type: none"><li>Mark bicycle lanes on road, including blue bicycle lanes through intersections;</li><li>Upgrade crosswalks and ramps;</li><li>Install advance pedestrian and bicycle signals;</li><li>Install visual and/or auditory warnings of approaching transit vehicles;</li><li>Use hedges and/or other landscaping to distinguish facilities; and</li><li>Establish wide, well-maintained pedestrian walkways.</li></ul></li></ul>	X	X	X
	<ul style="list-style-type: none"><li>Adjust signal timing to accommodate projected shifts in traffic volume.</li></ul>	X	X	X
	<ul style="list-style-type: none"><li>Ensure adequate sightlines.</li></ul>	X		

	<ul style="list-style-type: none"> <li>▪ Encourage changes in mode share, such as:               <ul style="list-style-type: none"> <li>○ Reduce motor-vehicle Average Annual Daily Traffic (AADT) through the use of Transportation Demand Management (TDM) strategies; and</li> <li>○ Increase connectivity to increase non-motor vehicle transportation options.</li> </ul> </li> </ul>	X	X	X
	<ul style="list-style-type: none"> <li>▪ Encourage traffic enforcement, such as:               <ul style="list-style-type: none"> <li>○ Establish regular adequate patrols;</li> <li>○ Use traffic cameras to monitor speeds;</li> <li>○ Make sure utilities are properly maintained and repaired; and</li> <li>○ Monitor and enforce the no-siren zone.</li> </ul> </li> </ul>	X		
	<ul style="list-style-type: none"> <li>▪ Add appropriately-scaled lighting that can be maintained regularly.</li> </ul>	X	X	X
	<ul style="list-style-type: none"> <li>▪ Access impact on the community and pedestrians before road widening recommendations are implemented.</li> </ul>	X	X	X
	<ul style="list-style-type: none"> <li>▪ Improvements at the intersection of Peachtree and Collier Roads could include:               <ul style="list-style-type: none"> <li>○ At the exit lane of the proposed Peachtree at Collier development on the east side of Peachtree Road, add a westbound right-turn lane to accommodate existing traffic from the development to northbound Peachtree Road;</li> <li>○ Add a southbound right-turn lane from Peachtree Road to westbound Collier Road.</li> </ul> </li> </ul>	X		
	<ul style="list-style-type: none"> <li>▪ Improvements at the intersection of Peachtree Street and 26<sup>th</sup> Street/Huntington Road could include:               <ul style="list-style-type: none"> <li>○ Add a northbound leading left-turn phase from Peachtree Street to westbound 26<sup>th</sup> Street.</li> </ul> </li> </ul>	X		

KEY FINDINGS	RECOMMENDATIONS	RELATIONSHIPS		
		Traffic	Access	Connectivity
Walkability and Bikeability				
The Walkability Audit (see Section 4.2 and Appendix A.4) found significant barriers to walking and bicycling in the study area, including poorly-maintained sidewalks, insufficient buffers between pedestrians and traffic, insufficient signage, a lack of shade, and a lack of accommodation for bicycles.	▪ Improve and increase barriers between pedestrian and automotive traffic along high-volume corridors, such as Collier Road.		X	X
	▪ Make improvements to the pedestrian environment, which could include: <ul style="list-style-type: none"><li>○ Improve the quality of the sidewalks;</li><li>○ Ensure sidewalk width is adequate for two adults walking abreast;</li><li>○ Increase the number of crosswalks;</li><li>○ Increase and maintain lighting for pedestrians;</li><li>○ Add pedestrian signals to existing intersections;</li><li>○ Narrow roadways or lanes;</li><li>○ Reduce number of lanes;</li><li>○ Add medians;</li><li>○ Add textured pavement;</li><li>○ Add speed tables; and</li><li>○ Add or upgrade landscaping.</li></ul>	X	X	X
	▪ Identify those destinations easiest to reach by bicycle and install bicycle-friendly facilities (such as bicycle racks, water fountains, etc.).		X	X
	▪ Increase pedestrian education to include: <ul style="list-style-type: none"><li>○ Wayfinding signage to make pedestrian routes easier to follow; and</li><li>○ Conduct outreach within the community to make residents familiar with new walking and bicycle options in the community.</li></ul>		X	X



	<ul style="list-style-type: none"> <li>▪ Make improvements specifically aimed at increasing the ability of disabled people to walk, such as:               <ul style="list-style-type: none"> <li>○ Adding railings where appropriate;</li> <li>○ Adding curb ramps with tactile strips;</li> <li>○ Installing walk signals with an auditory component;</li> <li>○ Increasing the duration of walk signals, where necessary;</li> <li>○ Adding median refuge islands to multi-lane roads;</li> <li>○ Adding clearly marked intersections;</li> <li>○ Adding warning signs, where appropriate;</li> <li>○ Adding places to rest (such as benches); and</li> <li>○ Making sure walkways are kept free of obstructions or trip hazards.</li> </ul> </li> </ul>		<b>X</b>	<b>X</b>
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KEY FINDINGS	RECOMMENDATIONS	RELATIONSHIPS		
		Traffic	Access	Connectivity
Safety				
A lack of perceived safety inhibits walking and bicycling among residents and visitors within the study area, and thus limits opportunities for physical activity.	▪ Create safe crossings, clearly marked as such.		X	X
	▪ Improve the perceived safety of pedestrian environments through such measures as: <ul style="list-style-type: none"><li>○ Installing call boxes or providing other methods of access to emergency communication;</li><li>○ Adding appropriately-scaled, regularly-maintained lighting;</li><li>○ Adding signage with information about safe behavior; and</li><li>○ Ensuring adequate signage.</li></ul>		X	X
	▪ Create a community monitoring and reporting program.		X	X
	▪ Include emergency/disaster routes in planning changes to the built environment and ensure that new development does not block such routes.		X	X

KEY FINDINGS	RECOMMENDATIONS	RELATIONSHIPS		
		Traffic	Access	Connectivity
Future Changes to the Built Environment				
New proposed developments will increase traffic and activity within the study area. Without taking these changes into account, quality of life within the study area will decrease.	<ul style="list-style-type: none"><li>Create a board, comprised of representatives from Piedmont Hospital, the community, and the neighborhoods affected, to collaborate on responses to changes to the built environment, especially those changes with the potential to generate negative health impacts.</li></ul>	X	X	X
	<ul style="list-style-type: none"><li>Establish a custom that, in the event of construction of, renovations to, or additions to hospital facilities, hospital officials will meet with neighborhood residents to discuss the potential impacts of related disturbances.</li></ul>		X	
	<ul style="list-style-type: none"><li>Conduct either a qualitative or a quantitative assessment of anticipated construction noise prior to the start of construction, renovation, or expansion projects.</li></ul>		X	
	<ul style="list-style-type: none"><li>Require that future developments be built as to be “street-oriented.”</li></ul>		X	X

KEY FINDINGS	RECOMMENDATIONS	RELATIONSHIPS		
		Traffic	Access	Connectivity
Transit				
New transit developments, such as the BeltLine or the Peachtree Streetcar, could improve connectivity, increase non-motorized transit options, and reduce some traffic as residents and visitors have more options by which to reach their destinations.	▪ Ensure access to transit at points no further than one-half mile apart.	X	X	X
	▪ Include prospective transit developments in planning the surrounding built environment. For example, the bicycle lanes proposed as part of the Peachtree Corridor redevelopment are improperly located in relation to the proposed Peachtree Streetcar, exposing would-be bicyclists to a higher level of injury risk.			X

# Section 6:

## Conclusions

This project presents a unique opportunity to add to the literature on the role of anchor institutions in urban areas, but also to build upon the Atlanta BeltLine Health Impact Assessment (HIA) completed in 2007. The Atlanta BeltLine project anchors the vision for the City of Atlanta. The Brookwood Alliance and neighboring communities working with Piedmont Hospital have an opportunity to refine that vision by the creation of a walkable, safe, accessible pedestrian-friendly environment designed to support physical activity and engender positive health outcomes to serve as a model for other urban areas.

Piedmont Hospital has been providing services to residents of the City of Atlanta and the metropolitan region since 1905. Its 26-acre main campus—which includes two hospitals for a total of 600 beds—is located on Peachtree Road at the intersection of Collier Road in south Buckhead. Piedmont Healthcare has also steadily expanded its facilities outside the main campus, owning three other hospitals in and around metro Atlanta: Piedmont Mountinside Hospital, Piedmont Fayette Community Hospital, and Piedmont Newnan Hospital. Its off-site primary- and specialty-care physician offices are also growing in number. But the most important part of the Piedmont Healthcare system is the facility on Peachtree Road.

Piedmont Hospital is an anchor institution and accordingly impacts the communities in which it is located. Anchor institutions exert tremendous influence on the character, quality of life, day-to-day operations, and health of those entities and communities located nearby. Many retail and business establishments will locate within or near a hospital to serve its staff, patients, and visitors. Piedmont Hospital alone is responsible for 8,000 jobs, giving an idea of its importance to the surrounding area. Its adjacency to Peachtree Road/Street also puts it near Atlanta's best-known economic corridor.

However, the hospital is also located in a largely residential area slated for enormous change. Piedmont and its nearby neighborhoods—Ardmore Park, Brookwood, Brookwood Hills, Collier Hills, Collier Hills North, Colonial Homes, Peachtree Hills and Peachtree Battle—fall within the geographic area covered by the Atlanta BeltLine, the largest redevelopment project ever undertaken by the City of Atlanta. Once complete, the BeltLine will transform a 22-mile loop of freight rail to parks, trails, transit and new residential and commercial developments. The project is viewed as a springboard for creating a new Atlanta. A number of other development projects currently being promoted, including the Atlanta Streetcar, will have significant implications for both Piedmont Hospital and the residential communities that surround it.

Because of Piedmont Hospital's economic importance as an anchor institution, and because the surrounding area can expect new changes aimed at improving the economic opportunities and



quality of life of residents and visitors, the hospital and its environs are an appropriate setting in which to conduct a Health Impact Assessment (HIA). The Center for Quality Growth and Regional Development (CQGRD), having previously completed a prospective HIA of the BeltLine, took on the task of determining the potential health impacts, both positive and negative, of Piedmont Hospital on nearby communities, and how those impacts might change in the wake of new development.

One of the most important contributions of this HIA is the identification of how an anchor institution, such as a hospital, and its built environment, might contribute, positively or negatively, to the health of a community. An HIA provides a measurable link between physical conditions and impacts on a community's health, which is directly related to the quality of life in the area. While the relationship between health and the built environment is complex, it is time for decision-makers, city planners, and public-health practitioners to engage more in mitigating potential negative impacts and enhancing potential positive impacts of the built environment.

The investigation consisted of both a retrospective and a prospective HIA to examine the influence of transportation, land use, and urban design on health, and to see how these factors affect health around the Piedmont Hospital area and to has examine how future changes in the designated study area will influence the health impacts associated with the hospital.

This HIA provides an initial assessment of the influence of anchor institutions, particularly hospitals, on the health and well-being of residents of communities in which they are located. This is a particularly timely undertaking, as the built environment in many urban areas is being reconfigured with the potential to emerge more supportive of more positive health outcomes.

## Key Conclusions

This HIA has identified a large number of potential health effects. The following section outlines several critical findings and presents principles and actions that can increase the likelihood of positive health outcomes.

- The census block groups with the most vulnerable populations are those immediately adjacent to the Piedmont Hospital campus. Although as a whole, the neighborhoods are wealthier and less vulnerable than the City of Atlanta, it is worth noting that the most vulnerable populations, mainly due to age, might suffer disproportionately from negative health impacts related directly to the hospital, such as noise, traffic and a lack of connectivity.
- Through early scoping the project team identified key health impacts related to automobile traffic, access, and connectivity. Stakeholder involvement verified these impacts and also pointed to noise as an important health concern.
- Currently, as a result of poor connectivity and large amounts of traffic, hospital access is structured such that an automobile is required. The reconfiguration of the hospital campus and the relocation of entry and access points would help reduce traffic by managing demand, facilitating access by other modes, and enhancing connectivity. These actions would create more opportunities for physical activity, make the environment safer, and reduce the need to drive.
- More than half of survey respondents hold a broad definition of health, which focuses on a state of complete physical, social, and mental well-being. The hospital has the opportunity to build on this understanding by adding neighborhood outreach programs and citizen education classes on the positive impact of physical activity on positive health outcomes and by reconfiguring its environment to reflect this view of health.

- More than half of survey respondents indicated they associate traffic conditions and congestion with the existence of Piedmont Hospital in their neighborhood. They suggest improvements in the ability to walk and bike would enhance positive health outcomes. Hospital officials should establish a system of priority to place pedestrians, cyclists, seniors, youth, residents and patients first when considering development projects, hospital planning and transportation improvements.
- Respondents suggest that creating safe crossings and providing safe access to parks, trails, and recreational centers would have positive impacts on the health of residents.
- The hospital, the City of Atlanta, and local planners should work to enhance connectivity, provide alternative modes, structure pedestrian enclaves, and facilitate connectivity to major destinations so that the 93 percent of respondents who say it's possible to walk or bike to their destinations can and choose to do so.
- A majority (approximately 83 percent) of respondents think living near a general healthcare facility has a positive impact on their health. However, only 38 percent think living near Piedmont Hospital has a positive effect on their health. Hospitals working in partnership with communities have the opportunity to configure urban communities and restructure the built environment to promote healthier outcomes.
- The study area will require significant improvement to its transportation system, including improvements to the intersection of Collier Road and Peachtree Road, to accommodate projected 2030 growth.
- The Walkability Audit (see Section 4.2) clearly outlined the vulnerability of the pedestrian and the difficulty of walking, running, or cycling to parks, trails, or other commercial and social amenities in the existing area. Sidewalks are often deteriorating and in some cases nonexistent, while obstructions make pedestrian passage challenging.
- Urban design tools will be useful to develop safer connections among the hospital, its surrounding neighborhoods, and other local destinations. Potential improvements include redesign of curb ramps with tactile strips, appropriate buffers separating pedestrian and vehicular traffic, advanced pedestrian and bicycle signals, median refuge islands on multi-lane roads, clearly marked intersections and warnings, places to rest, and a walkway free of obstructions or trip hazards.
- The Atlanta BeltLine, the Peachtree Streetcar, and other proposed developments and redevelopments will continue to exacerbate traffic, safety, and walkability issues in the study area. This will limit the ability of residents, employees and visitors to the hospital, and others to engage in physical activity, resulting in a greater risk of negative health outcomes. The City of Atlanta should expand its vision of the BeltLine and partner with the community and the hospital to create a residential and medical complex that embraces a commitment to physical activity, safety, and a healthy environment.

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## Appendix A.2 – HIA Literature Review

The following literature review, based on work conducted for the *BeltLine Health Impact Assessment* ([http://www.cqgrd.gatech.edu/PDFs/BLHIA\\_report2007updated.pdf](http://www.cqgrd.gatech.edu/PDFs/BLHIA_report2007updated.pdf)), has been updated to reflect recent research findings.

### Access and Social Equity

Accessibility is a crucial element in achieving a healthy city. Access refers to an individual's or group's ability to get to health-promoting goods, services, amenities, and opportunities at reasonable cost, in reasonable time, and with reasonable ease (Social Exclusion Unit, 2003). It is concerned with both the proximity of such things, as well as the infrastructure and services that enable people to travel to these destinations. Numerous studies have linked several critical needs to support good health including transportation, housing, food, and greenspace. Specific health conditions associated with access or the lack of access include obesity, diabetes, heart disease, mental and social health and poor physical condition.

Historically underserved populations, and hence the populations discussed regarding social equity, include poor people and people of color. Furthermore, these populations suffer from disproportionate prevalence of disease. For example, in households earning less than \$15,000 obesity rates are higher, physical inactivity is more likely, and the risks of health problems associated with a sedentary lifestyle are greater compared to households with incomes above \$50,000 (Emerine and Feldman, 2005). Other studies have found that people of color are less likely to get the recommended levels of physical activity and more likely to experience the chronic disease associated with a sedentary lifestyle compared to the total population. There is evidence that less than one-third of adults aged 65 to 74 take part in regular physical activity (U.S. Department of Health and Human Services, 2000); women, especially minority women, have higher rates of physical inactivity than men (Crespo, 2000); the rate of prevalence of being overweight in children has nearly tripled (U.S. Department of Health and Human Services, 2001); and certain ethnic minority populations and children in low-income households have been found to have higher rates of obesity than the population at large (Institute of Medicine, 2004).

More recent studies have added children and older adults to populations of concern. For instance, specific types of air pollution have been identified as having an adverse effect on the lung development of adolescents, which can lead to lifelong lung deficiency (Gauderman et al., 2000; Gauderman et al., 2004). Research has also shown that cardiovascular hospital admissions are associated with certain air pollutants (Barnett et al., 2006). A combination of greater vulnerabilities to unhealthy environments and often less ability to influence decisions about living arrangements (due to youthfulness and a fixed income) makes children and older adults a particularly at risk population.

### Physical Activity

Physical activity can be defined as “bodily movement produced by the contraction of skeletal muscles that increases energy expenditure above the basal level” (U.S. Department of Health and Human Services, 2001). It is typically categorized by the context in which it occurs, such as transportation, leisure, household, and occupation (Transportation Research Board, 2005). *Physical fitness* has been defined as the “ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and to meet unforeseen emergencies” (U.S. Department of Health and Human Services, 2001). The term applies both to athletic- and performance-related fitness as well as health-related fitness (Transportation Research Board, 2005). Finally, *exercise* is considered a subcategory of physical

activity and relates to physical activity that is “planned, structured repetitive, and purposive...” with physical fitness as the objective (Transportation Research Board, 2005).

Because research shows that many chronic diseases, such as obesity, diabetes, cardiovascular disease, and some cancers, can be prevented or controlled by engaging in physical activity, physical activity has become an important part of the discussion on health and the built environment. Approximately 60% of the U.S. adult population is at risk for diseases associated with physical inactivity because they do not achieve the recommended 30 minutes of daily physical activity (National Institute on Aging, 2000), and 25 percent of all adults are completely inactive (Center for Chronic Disease Prevention and Health Promotion, 1999). Physical inactivity is thought to account for 22 percent of colon cancers, 18 percent of osteoporotic fractures, 12 percent of diabetes, 12 percent of hypertension, and 5 percent of breast cancer cases (Pratt et al., 2000). Moreover, an estimated 200,000 deaths per year are attributed to a lack of physical activity (U.S. Department of Health and Human Services, 1996). Studies show that between 32 percent and 35 percent of deaths in the U.S. due to coronary heart disease, colon cancer, and diabetes could be prevented by regular physical activity (Flegal et al., 2005).

Fortunately, even modest increases in physical activity have the potential to produce significant health benefits (Pate et al., 1995). For example, a study in Copenhagen, Denmark found that bicycling to work (average cycling time to work was three hours per week) was related to a 38 percent decreased risk of mortality after adjusting for leisure-time physical activity, body mass index (BMI), blood lipid levels, smoking, and blood pressure (Andersen et al., 2000). Another study in France examined men between the ages of 50 and 59 and found that those who regularly spent more than 10 MET h/week (metabolic equivalent hours per week) in walking or cycling to work had a lower mean BMI ( $0.3\text{kg/m}^2$ ), waist circumference (1 cm) and change in BMI over 5 years ( $0.06\text{ kg/m}^2$ ) than those who did not expend energy getting to work (Wagner et al. 2001). Research has also shown that walking at least ten blocks per day is adequate to maintain health and reduce the risk of cardiovascular events in older individuals (Sesso et al., 1999).

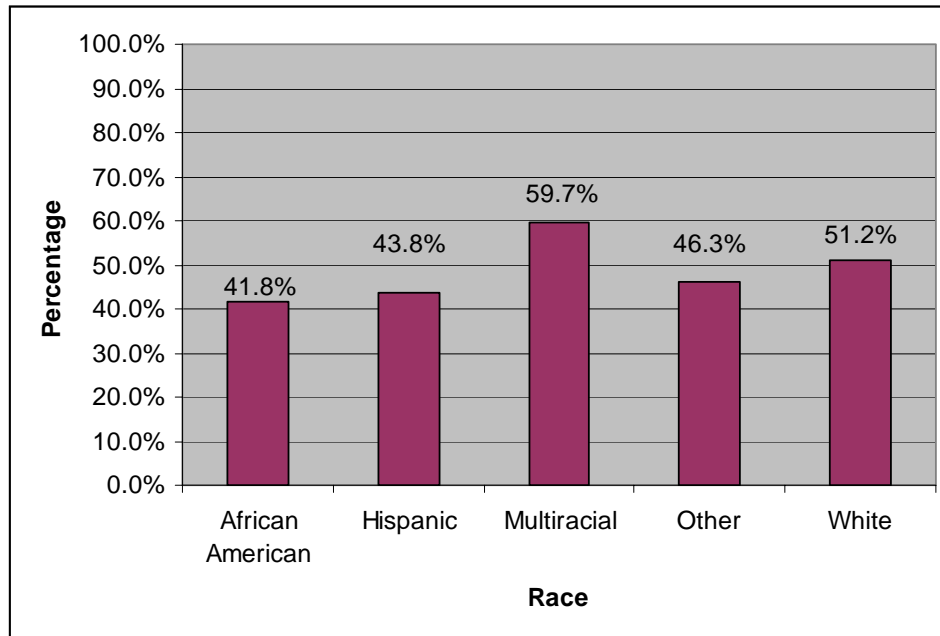
Regular physical activity is beneficial to people of all ages and walks of life, having positive effects on health, longevity, and quality of life. It has been found to improve self-image, self-esteem, physical and mental wellness, and overall health. The benefits of regular physical activity extend to both older and younger adults (Kaplan et al., 1996; Paffenbarger et al., 1993; Sherman et al., 1994; Transportation Research Board, 2005). In fact, benefits of physical activity have been seen in all segments of the population including people with disabilities and chronic diseases (Transportation Research Board, 2005). Participating in regular physical activity starting at an early age appears to have lifelong health benefits in terms of early muscle, bone, and joint development as well as weight control, high blood pressure prevention, and feelings of depression and anxiety (Report to the President, 2000; Transportation Research Board, 2005). Negative health effects associated with low physical activity include heart disease, certain types of cancers, high blood pressure, stroke, osteoporosis, obesity, diabetes, and higher mortality rates (Flournoy, 2002; U.S. Department of Health and Human Services, 1996; World Health Organization, 2004; World Health Organization, 2005).

U.S. physical activity prevalence data reveal differences across socioeconomic groups. The detailed physical activity prevalence data by race, education, and age are included in FIGURES A.2.1, A.2.2, and A.2.3 (Center for Chronic Disease Prevention and Health Promotion, 2005). Women, for example, tend to be less physically active than men and minority women are typically the least physically active (Emerine and Feldman, 2005). According to the 2005 Behavioral Risk Factor Surveillance System (BRFSS), African Americans and Hispanics engaged in less physical activity compared to whites. As FIGURE A.1 shows, the African-American population is less likely, compared to Hispanic, multiracial, white, or other groups, to take part in at least 30 minutes of moderate physical activity five or more days per week or vigorous physical activity for 20 or more minutes three or more days per week. In addition, the data suggest a dose-response relationship between education attainment and levels of physical activity, with higher levels of education being related to higher levels of physical activity. For example, the population with less



than a high school degree is 15 percent less likely to get the recommended amount of physical activity (see FIGURE A.2). Differences in physical activity levels were also apparent by age; those aged 65 years or more engaged in the least amount of physical activity compared to all other age groups (see FIGURE A.3).

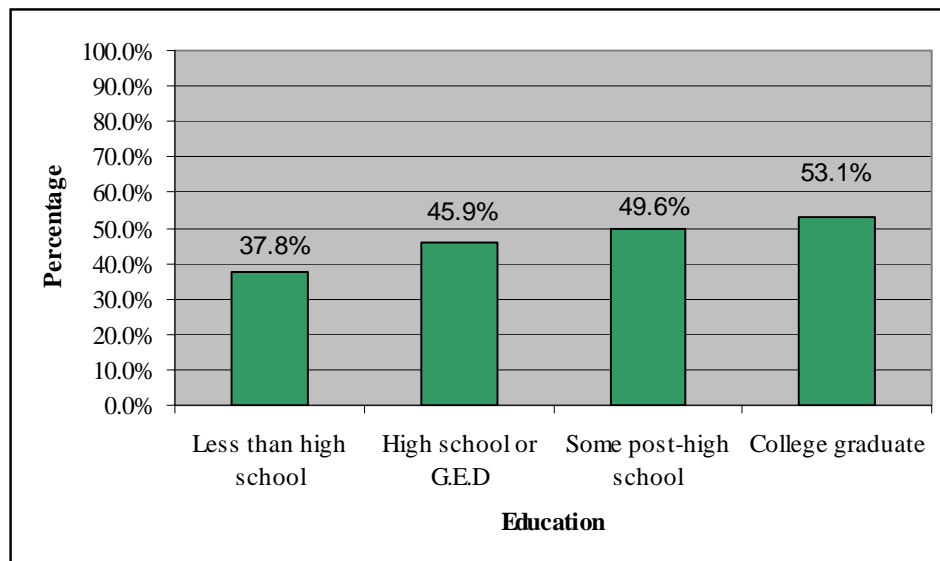
**FIGURE A.1 – Physical Activity Levels of Adults by Race\***



SOURCE: Center for Chronic Disease Prevention and Health Promotion, 2005

\* Percentage of adults with 30 or more minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20 or more minutes three or more days per week, by race.

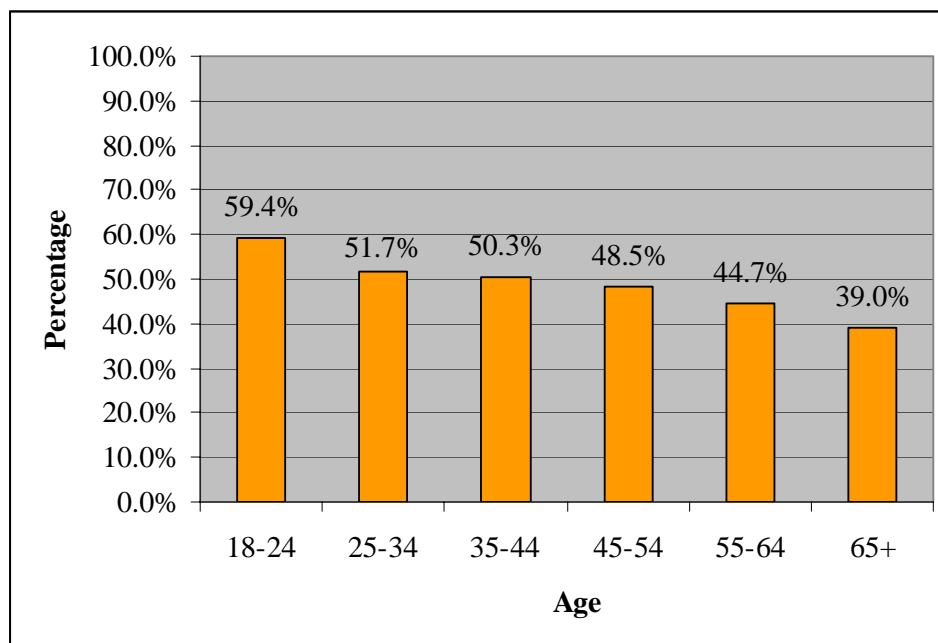
**FIGURE A.2 – Physical Activity Levels of Adults by Education\***



SOURCE: Center for Chronic Disease Prevention and Health Promotion, 2005

\* Percentage of adults with 30 or more minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20 or more minutes three or more days per week, by education level (Centers for Disease Control and Prevention, 2005)

**FIGURE A. 3 – Physical Activity Levels of Adults by Age\***



SOURCE: Center for Chronic Disease Prevention and Health Promotion, 2005

\* Percentage of adults with 30 or more minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20 or more minutes three or more days per week, by age.

Two approaches are being used to change patterns of physical inactivity: interventions and alterations to the built environment. First, the public health field has attempted to increase physical activity through interventions that are used to prevent rather than treat a disease through surveillance and the promotion of healthy living habits and behaviors. Much research has been completed on the success of interventions with the goal of increasing physical activity. Systematic reviews of population-based interventions to promote health and prevent disease have provided strong evidence that public health efforts can successfully increase physical activity (Truman et al., 2000; Kahn et al., 2002). Sallis and Owen (1996) hypothesized that when physical activity interventions are unsuccessful, it is because environmental factors which influence sedentary behavior remained in place during (and after) the intervention had ended.

The second approach to increasing physical activity is via alterations to the built environment. Researchers have begun to examine the impact of societal and environmental variables on both sedentary and physical activity behavior (Green and Kreuter, 1991; Dishman and Sallis, 1994; King et al., 1997; Owen et al., 2000). The variables that encourage physical activity include street lighting, stair accessibility, walking/bicycling paths, parks, and athletic clubs/gyms (King et al., 1997; Swinburn et al., 1999). In a review of 19 environmental studies, Humpel, Owen, and Leslie (2002) reported that greater physical activity was related to accessibility of a cycle path, access to exercise facilities, having exercise facilities on a frequently traveled route, having a park or shops within walking distance, safe footpaths, and living in a friendly, pleasant, and attractive neighborhood with enjoyable scenery.

Environmental and societal barriers to activity can include lack of access to infrastructure and services, economic limitations, and built environments that are unsafe and prohibit healthy activities. Health promoting attributes of the built environment can be associated with the socioeconomic composition of the neighborhood. For example, one study found that “moving

from a community with a 1 percent poverty rate to a 10 percent poverty rate is associated with a decreased prevalence of bike paths from 57 percent to 9 percent respectively” (Powell et al., 2004). Low income and minority individuals also typically lack access to healthy foods which contributes to the overweight and obesity problems (Emerine and Feldman, 2005).

For many communities, lack of access to transit has a relationship to physical activity levels. Despite the fact that most low-income and minority neighborhoods have low car-ownership rates, these communities are more likely to rely on cars for their primary mode of transportation reducing opportunities for physical activity (Emerine and Feldman, 2005). Finally, traffic, pedestrian, and personal safety are issues that directly affect physical activity levels. Neighborhoods with high traffic volume and speeds, lack of pedestrian or bike amenities like sidewalks and paths, and issues related to crime or incivilities (litter and graffiti) do not encourage or support physical activity (Emerine and Feldman, 2005).

For older adults, the design of the built environment is crucial to their ability to remain mobile and engage in physical activity. Walking is the primary mode of transportation and exercise for older adults (Emerine and Feldman, 2005). The design and condition of the built environment, if poor, can render the elderly housebound (Emerine and Feldman, 2005). This issue is becoming increasingly relevant as the older adult population grows.

## **Safety: Injury and Crime**

For the purposes of this HIA, “safety” is defined as the protection from harm, physical or psychological, caused by, in this case, crime or accidental injury as it relates to the component parts of the HIA study area. In this section we will consider the types of injury and crime that could occur in relation to the study area and the health impacts that might result.

Public safety both in terms of crime and injury will be an issue for the Hospitals and Community Health study area, both directly and indirectly. Users might avoid the study area if it is perceived as being “unsafe” or conducive of criminal activity, thereby reducing the positive effects. Injury on the other hand can include physical problems such as strains and sprains from increased physical activity or the more serious risks of injury or fatality from crashes associated with bicycles, cars, pedestrians, and transit.

## **Pedestrians and Bicyclists Injury**

In 2004, 42,636 people were killed and almost 2.8 million were injured on public roadways in the U. S. (NHTSA, 2005). In addition to the burden on the population, these injuries represent a tremendous cost burden. Motor vehicle crashes accounted for 18 percent of the \$117 billion spent on injury-attributable medical expenditures in 2000 (Finkelstein et al., 2004).

Because motor vehicle occupants represent the largest proportion of road users in the U.S., they are the most frequent victims of crashes. However, pedestrians and cyclists who represent a smaller proportion of road users are also vulnerable groups. In the U.S., these non-motorists represent almost 13 percent of all motor vehicle crash (MVC) deaths (NHTSA, 2005), although walk/bicycle trips represent only 9.5 percent of all trips and comprise shorter distances traveled than motorized travel modes (Pucher and Renne, 2003). A study by Pucher and Dijkstra (2003) used distance traveled to calculate fatality rates in the U.S. and found that pedestrians and cyclists in the U.S. were 23 times and 12 times, respectively, more likely to be killed than car occupants.

Several studies have concluded that increased pedestrian and bicycle volume may reduce the risk of pedestrian or bicycle crashes (Jacobsen, 2003; Robinson, 2005; Garder et al, 1998). However, it is important to note that, while a given individual’s risk of crash injury may be

reduced, the absolute number of injured pedestrians or cyclists may increase due to an increase in the number of these road users who are exposed to the traffic environment.

In 2004, a total of 4,641 pedestrians were killed and 68,000 were injured in the U.S (NHTSA, 2005). The pedestrian fatality rate is higher for males than for females and generally increases with age (NHTSA, 2005; Center for Chronic Disease Prevention and Health Promotion, 1999; Harruff et al., 1998). In contrast, the nonfatal pedestrian injury rate is highest among 10-15 year-olds (43 per 100,000) and begins to decrease with increasing age (NHTSA, 2005). The high fatality rate among older pedestrians is due in part to a higher case-fatality rate. Studies in metropolitan Atlanta and Seattle indicate that blacks and Hispanics have higher pedestrian fatality rates than whites or non-Hispanics (Center for Chronic Disease Prevention and Health Promotion, 1999; Harruff et al., 1998).

Almost half of all nonfatal pedestrian injuries occur at intersections, while only 21 percent of fatal injuries occur at intersections. Two-thirds of pedestrian deaths occur between 6 pm and 6 am and more than 80 percent of weekend deaths occur in the evening. Although the proportion of all alcohol-related crash fatalities has declined from 60 percent in 1982 to 39 percent in 2004, the proportion of pedestrians (14+ years) killed with a blood alcohol concentration (BAC) of 0.08+ has not declined in the last 20 years. In 2004, 36 percent of pedestrians (14+ years) killed had a BAC of 0.08+ (NHTSA, 2005).

In 2004, a total of 725 bicyclists were killed and an estimated 41,000 cyclists were injured in the U.S. (NHTSA, 2005). The bicyclist fatality rate is higher among males than females (0.44 versus 0.06 per 100,000, respectively). The fatality rate is highest among 10-15 year olds, then drops among young adults, and increases again for the 35 to 74 year age group. The nonfatal injury rate is highest among 10 to 15 year olds and decreases steadily with age. A survey of 2,335 American children found that for children between the ages 5 and 9 or the ages 10 and 13, rates of nonfatal injury due to bicycling or skating were greater than rates of motor-vehicle injury, though the motor-vehicle injuries were far more likely to be fatal (Scheidt et al., 1995). Two-thirds of the fatalities occurred at non-intersection locations, while almost two-thirds of the nonfatal injuries occurred at intersections. Most (69 percent) weekday bicycle fatalities occur between 6 am and 6 pm), while most (62 percent) weekend fatalities occur during the evening hours (NHTSA, 2005).

## **Sports and Recreational Injury**

The promotion of physical activity is a public health priority because of the potential to reduce the risk of cardiovascular disease and other health problems. However, physical activity can also be associated with injuries, which may have significant consequences, such as health care costs and disabilities. This review focuses primarily on those activities (e.g., walking, running, cycling) that are likely to occur on shared-use paths such as are proposed for areas of the study area.

Walking is not frequently associated with a significant increase in risk of injury (Bovens et al., 1989); however, runners and joggers are at risk for musculoskeletal injury (Bovens et al., 1989; Zemper, 1991; Hootman et al., 2002(b); Koplan et al., 1982). Further, walking has been shown to have a lower risk of injury than running (Colbert et al., 2000). Research has found that 27 percent to 70 percent of recreational and competitive runners are injured each year (Hreljac, 2005; Koplan et al., 1982). Musculoskeletal injuries of the knee or lower leg (including foot and ankle) are common. Risk factors for over-use injuries include excessive distance, high intensity, rapid increase in distance, running surface, and footwear (Hreljac, 2005; Hootman et al., 2001). One study concluded that exercising less than 20 miles/week at a pace slower than 15 minutes/mile may be protective of lower extremity injury (Hootman et al., 2002(a)).

Two studies of nonfatal bicycle injuries found that 75 percent of injuries treated in emergency departments (Davidson, 2005) and 93 percent of those treated during a physician or dentist visit

(Eliert-Petersson and Schelp, 1997) did not involve collisions with motor vehicles. Approximately 6 percent to 11 percent involved collisions with other bicyclists. Davidson (2005) found that 9 percent of the emergency department treated injuries occurred on bike paths (not on public roads) or shared-use pedestrian-bike paths, and 14 percent of injuries occurred at locations such as playgrounds, parks, and gardens. Tucci and Barone (1988) studies cycling crashes in an urban area and found that 92 percent of crashes occurred on a paved roadway, 4 percent occurred on the sidewalk, and 4 percent occurred on some other surface. The most common crash causes were cyclist being struck by a motor vehicle (28 percent), pedestrian or cyclist being struck by a cyclist (28 percent), and fall from bicycle (26 percent). The study did not identify whether the roadway crashes occurred in bike lanes or not, or whether bike lanes were available in this urban setting.

One notable exception to the positive association between physical activity and injury is the literature on falls among older adults. Analyses have concluded that exercise programs for older adults can reduce the risk of falls and hip fractures. Moreover, lack of physical activity is a risk factor for hip fracture (Hoirup et al., 2001).

Primary prevention of injury is important since people with a history of previous injury are about twice as likely to sustain an injury during physical activity, according to some studies (Hootman et al., 2001; Hootman et al., 2002(a); Lysholm and Wiklander, 1987; Koplan et al., 1985). A study of injuries in high school, cross-country runners found that previous injury was associated with a 20 percent increase in injuries experienced during the high school, cross-country season (Rauh et al., 2006). Injuries that result in permanent structural and biomechanical malfunction may contribute to the risk of future injury (Mechelen and Hlobil, 1987). Injury and fear of injury can also be barriers to adopting a more active lifestyle (Finch and Owen, 2001).

On a shared-use path where users are separated from the roadway, user-conflict interactions are less likely to occur with motor vehicles (though this may occur if the path intersects with the roadway), but are more likely to occur when users of the path may interact with other users. There is limited literature on injury outcomes due to user conflicts. However, based on current knowledge, it is appropriate to educate the shared-use path users about path “etiquette,” including staying to one side of the path, allowing faster moving travelers the ability to maneuver safely, and limiting speed of travel on the path (Federal Highway Administration, 1994). Other important safety measures include the use of appropriate safety gear, such as helmets and wearing clothing that is visible (i.e., reflective materials), particularly in the early morning and evening.

In summary, existing studies describe the incidence and prevalence of sports- and recreation-related injuries and risk factors associated with injuries. These studies indicate the need for injury prevention messages which could decrease the risk of injury and therefore encourage users of shared-use paths to engage in long-term and consistent use of the facility, thus resulting in increased overall health benefits.

## Social Capital

Social capital can be defined as the collective value of a network—social, political, and economic—whose purpose is to inspire trust in and provide support for other members of that community (Dannenberg et. al, 2003). Social capital is built both formally, through participation in group activities, and informally, through casual association and encounters. It is the degree to which people feel that they live in and belong to a socially cohesive local environment, and the range of activities and resources that emerge as a consequence of those ties. Overall, a decline of participation in various civic associations and of socialization with neighbors has been recorded in the United States (Putnam, 1995).



Individuals who are not well integrated into the social, political and economic networks, those with low social capital, are reportedly at increased risk for poor physical and mental health (Kawachi, 1999; Hawe et al., 2000). In contrast, people socially engaged in their communities live longer and are healthier both physically and psychologically (Kaplan et al., 1998; House, et al., 1988; Berkman, 1979; Seeman et al., 1987; Kawachi, 1999; Berkman et al., 2000; Kawachi & Berkman, 2001; Brummett et al., 2001).

Some researchers have argued that social capital plays a role in health in several ways: by serving as a source for information and goods and identifying norms of healthy behavior; creating social ties and emotional support; and contributing to collective efficacy or the ability to problem solve to achieve group gain (University of California- Berkeley Health Impact Group, 2007). When the information shared among members of a socially cohesive group regards health care or health-related services, such sharing directly impacts the health of those involved. Identifying norms of healthy behavior can be used to reinforce healthy living habits, such as not smoking, physical activity, prenatal care, and healthy eating habits. Social ties are based on mutual trust and the desire for individuals to look out for one another. Such ties can have profound affects both on the mental and physical health of individuals by reducing feelings of isolation and contributing to overall feelings of self-esteem and self-worth. Finally, social capital can lead to collective efficacy in which the information, resources, and talents of the group are pooled to achieve a desired positive outcome for health and well-being (University of California- Berkeley Health Impact Group, 2007).

In the last decade, a number of studies have established a link between social capital and a variety of health outcomes. Individuals with high social capital tend to live longer and are physically and mentally healthier (Leyden, 2003). Studies have shown that isolation is a major cause of illness, and that once ill, socially isolated individuals are two to five times more likely to die than those with strong social networks (Berkman and Glass, 2000). Thus social capital has been linked to prolonged life expectancy. Social capital has also been linked to better overall health including fewer colds, better cardiovascular health with reduced risk of stroke and heart attack, reduced risk of cancer, faster recovery from illnesses, and improved mental health (better self-esteem, self-image, and greater self-worth) (Putnam, 2000; Ewing & Kreutzer, 2006). Social capital, with its components of networking, information-sharing, and social norms, has been found to have an effect on prenatal care and infant mortality rates (Harpham et al., 2002). In addition, there are conceptual links between support provided by social networks and improved mental health, particularly in times of stress (Harpham et al., 2002). Social capital has even been shown to reduce incidents of violent crime and increase physical activity, as residents of safer environments tend to spend more time thereby partaking in more activities, including active travel, and providing informal surveillance to decrease crime (Ewing and Kreutzer, 2006; Adler and Newman, 2002).

Social capital is built through positive social interactions, group activities, political and civic engagement, and membership in clubs and organizations, among other means. In today's society, people acquire social networks beyond their neighborhoods through their jobs, clubs, or houses of worship in what can be called communities of interest (Glynn, 1986; McMillan and Chavis, 1986; Lyon, 1987; Cochran, 1994; Nasar and Julian, 1995). However, people also become involved in their immediate environment or their community in place, which is important for the creation of social capital within the neighborhood (Glynn, 1986; McMillan and Chavis, 1986; Cochran, 1994; Nasar and Julian, 1995).

Robert Putnam, whose book *Bowling Alone* (2000), examined the concept of social capital, describes two types of social capital: bonding and bridging. Bonding social capital ties people together through inclusion, but with exclusion as a by-product. Bridging social capital expands the social network outwards beyond the insularity of the group fostering a larger scale sharing of information and sense of well being and inclusion (Putnam, 2000; Ewing and Kreutzer, 2006 (citing numerous studies)). Public participation is affected by social capital in that low social

capital results in decreased public participation. However, public participation also creates social capital by encouraging group visioning and consensus building.

Evidence shows that social capital is affected not only by public participation and community involvement, but also by the built environment. Much of the research that has examined the relationship between the built environment and social capital has focused on the differences between traditional, urban neighborhoods and suburban neighborhoods. The results indicate that social capital tends to be higher in traditional neighborhoods. As Piedmont Hospital is an urban hospital, it is unnecessary to discuss the suburban context in great detail. Instead it is important to look at those features of a built urban environment that have an influence on social capital, and by extension physical and mental health.

Research suggests that walkability, automobile dependence, mix of land uses, density, size of place, traffic volume, homogeneity, and presence of public spaces all impact social capital through their ability to create or support opportunities for formal and informal interaction. Walkability, which refers not only to the design of a public space or a neighborhood but also to feelings of personal safety, is positively correlated to social capital. Walkable neighborhoods are typically defined as those that have: a grid-street pattern, narrow streets, small lots, mix of uses, density, traffic calming, sidewalks and crosswalks, and the presence of parks, trails, and other public spaces (Ewing and Kreutzer, 2006). A study by Hollie Lund from California State Polytechnic University, set in Portland, Oregon, found that having an interest in walking, opportunities for social interaction, and feeling safe while walking were all positive predictors of a sense of community. In addition, the study found that sense of community was more strongly correlated with recreational walking trips rather than destination trips (Ewing and Kreutzer, 2006).

Mixed uses and density as independent variables in research have proven to be inconclusive in their relationship to social capital. Although there is evidence to suggest that mixing uses in close proximity tends to increase the number of walking destinations and thereby social capital, the evidence in relation to density is less clear (Ewing and Kreutzer, 2006). The size of place, like a residential development, neighborhood, or city, also correlates with social capital, with larger places typically having less social capital (Putnam, 2000).

Automobile dependence, in particular for commuting long distances, has been correlated with decreased social capital (Ewing and Kreutzer, 2006). Robert Putnam found that each 10 minutes spent commuting translates directly into a 10 percent decrease in community involvement (Putnam, 2000). Traffic volume has been shown to affect people's sense of community; as traffic volumes increase, people's social capital decreases. Similarly, research suggests that people residing on streets with light traffic volumes have larger social networks than those on streets with heavy volume (Lavin et al., 2006). The link between high traffic volume/speed and low social capital stems primarily from three causes: (1) fear for personal safety, which limits walking and children playing outside; (2) not wanting to walk in an unpleasant environment; and (3) the physical divide caused by the amount of traffic, its speed, and the width of the road (Lavin et al., 2006).

The decline of social capital has been attributed in part to a loss of public spaces. These public spaces, including sidewalks, parks, plazas, dog parks, community gardens, playgrounds, and even cafes, bookstores, and hair salons provide spaces in which people can interact intentionally or accidentally, formally or informally. These moments of interaction, whether for the exchange of pleasantries or information, create and strengthen the social networking bonds of social capital and can have real and substantial positive health outcomes (Ewing and Kreutzer, 2006; Baum and Palmer, 2002; Bedimo-Rung et al., 2005; Leyden, 2003). In addition, these opportunities for socializing in public spaces or neutral territories can help reduce feelings of prejudice and increase understanding of other cultures and races by enabling interaction amongst people of differing races, economic status, education levels, and ethnicities thereby building feelings of social capital (Lewis, 1996). Homogeneity in communities, particularly in terms of income and

age, has been shown to reduce social capital, in particular political participation, which can have detrimental impacts on the well-being of that community (Ewing and Kreutzer, 2006).

The design of the built environment in terms of architecture can also have an effect on social capital. The placement of entrances to residential units that are adjacent to or facing one another, or that are directly connected to pedestrian paths or active common spaces, increases the likelihood of social interaction. The inclusion of certain architectural features such as stoops, porches, and communal gathering spaces also increases social interaction, improving one's sense of emotional well-being. Views of and access to nature have also been shown to have positive health impacts resulting in increased recovery times for hospital patients, decreased mortality in seniors, lower blood pressure and decreased anxiety, and higher levels of attention in school age children (Lavin et al., 2006).

Declining social capital can also be blamed on the condition and deterioration of the built environment and the accompanying social ills that affect perceptions of personal safety, well-being, and overall quality of life. High crime rates, vandalism, litter, and graffiti, have been shown to decrease the willingness of people to be involved in their community. For example, fear for personal safety is an often cited reason for not engaging in physical activity out of doors, thereby reducing the possibilities of informal interactions with neighbors. There is mounting evidence to support the assumption that poorer people have poorer health because they live in places that are unhealthy, although the relationship is complex (Baum and Palmer, 2002). One study indicated that residents of high poverty neighborhoods live on average eight years less than non-poverty neighborhoods (Bhatia et al., 2006).

In addition, involuntary displacement and gentrification also diminish social capital by removing people from their established social networks and support systems, which has physical and mental health implications (Bhatia et al., 2006). Neighborhood change, whether in terms of gentrification and displacement or increasing crime and deterioration, can be stressful for long-time residents who feel unable to control the events surrounding them which can have negative mental and physical health repercussions (Baum and Palmer, 2002).

## Environment

Primary environmental impacts related to the Hospitals and Community Health study area includes issues related to air quality and noise. Air quality includes the regional and localized context. Finally, noise issues are concerned with potential disturbances from construction and operation of Piedmont Hospital as indicated in the survey and responses from those residing in the affected neighborhoods.

### Air Quality

Air quality is a topic that has become pervasive in recent decades. The various impacts of air quality on health, the environment, and quality of life in general have led to interventions such as the Clean Air Act of 1970, which was introduced to minimize the impacts of poor air quality by setting limits on the total amount of pollutants that can be released into the air in the United States. Air pollutants are introduced into the environment directly from mobile sources (automobiles, trucks, trains), stationary sources (factories, power plants), or indoor sources (building materials). Some pollutants, such as ozone, are the result of a chemical reaction of other pollutants.

Air quality regulations established by the Clean Air Act are built around National Ambient Air Quality Standards (NAAQS) for each of six types of ambient air pollutants: ozone, lead, nitrogen dioxide, particulate matter, carbon monoxide, and sulfur dioxide. All of these pollutants with the exception of particulate matter are gaseous substances. Particulate matter (PM) refers to solid

particles and liquid droplets suspended in the air and is generally measured in PM 10, particulates with a diameter of 10 micrometers or less and more recently PM 2.5 (also referred to as fine particulate matter), particulates with a diameter of 2.5 micrometers or less.

Air quality is linked to health in a variety of ways. The health effects of these pollutants include reduced lung function, asthma and other respiratory illnesses, cancer, irritation of breathing passages, premature death, with children and the elderly being at a higher risk than the general population (U.S. Environmental Protection Agency, 2006).

Short- and long-term exposure to air pollutants can have health effects at both a regional and local scale. Increased rates of mortality and morbidity from cardiovascular and respiratory diseases have been associated with various indices of air pollution, including gaseous pollutants generated by the burning of fossil fuels, but have been most strongly associated with air pollution that contains fine particulate matter (Health Effects Institute, 1999; Dockery et al. 1993; Lippman et al., 2002). Hospital admissions for cardiovascular and respiratory diseases in Europe and North America have been observed to be associated with PM and gaseous pollutants such as ozone, CO and NO<sub>2</sub> (Health Effects Institute, 1999).

The effects of gaseous and particulate pollutants on health have been found in both short- (acute exposure) and long-term studies (chronic exposure) with effects being seen at very low levels of exposure. However research is ambiguous on whether or not there is a threshold concentration below which no effect on health will occur (Brunekreef and Holgate, 2002). Both short- and long-term exposure to particulate matter (PM) have been associated with increased rates of cardio-respiratory morbidity and mortality. This includes increased lung cancer risk, along with short- and long-term non-cancer health effects such as bronchitis, asthma, and reduced lung function (Bhatia et al. 2006). Additionally, PM 2.5 is seen to have an adverse effect on lung development in adolescents that can lead to lifelong lung deficiency (Gauderman et al., 2000; Gauderman et al., 2004). The elderly are also at increased risk for negative health effects stemming from exposure to PM. Research has shown that common emission sources for PM have significant associations with elderly cardiovascular hospital emissions and that modest amounts of air pollutants are associated with small changes in cardiac function in the elderly (Barnett et al., 2006; Mar and Koenig, 2005).

Studies by Houston et al. (2006) and Fischer et al. (2000), have examined particulate matter's impact on human health. PM 2.5 is generally seen to have a greater negative effect on health, since the particles are small enough to be absorbed through lung tissue into the bloodstream, but both PM 2.5 and PM 10 can have a negative effect on health (Health Effects Institute, 1999; Health Effects Institute, 2001). Studies have indicated that vehicle-related fine particulate matter becomes highly concentrated in areas immediately adjacent (200 meters) to major roadways. Outdoor particulate matter concentrations (PM2.5 and PM10) are an estimated 15 percent to 20 percent higher at homes located in high traffic intensity streets compared to low traffic homes. Vehicle-related pollutants have been associated with increased respiratory illness, impaired lung development and function, and increased infant mortality. Also, pregnant women living within 200 to 300 meters of high-volume roads face a 10 percent to 20 percent higher risk of early birth and of low-birth-weight babies. In addition to general vehicle exhaust, exposure to fine particulates from diesel exhaust has a negative effect on those that live near roadways or areas such as rail yards or inter-modal yards with high diesel emissions. People living in immediate proximities (200 meters) of major diesel thoroughfares are more likely to suffer from respiratory ailments, childhood cancer, brain cancer, leukemia, and higher mortality rates than those who live further away. Research shows that particulate concentrations approach normal background levels at distances greater than 200 meters (Houston, et al. 2006; Fischer, et al., 2000).

## Noise

Beginning in the early 1970s, noise and vibration, caused by various modes of transportation, came under scrutiny by the U.S. Environmental Protection Agency (EPA). The National Environmental Policy Act (NEPA) requires the preparation of an Environmental Impact Statement (EIS) for every transportation project that involves the federal government at any level. Noise and vibration are two of the environmental impacts that must be evaluated because it has been determined that while they are minor irritants at low levels over short periods of time, at higher decibel levels and over longer periods of time they can have adverse health effects. Ultimately, noise and vibration can impact health and degrade quality of life if not prevented or mitigated (Transportation Research Board, 2005(b)).

Exposure to noise has been associated with a number of negative health effects. There are psychosocial responses of which noise annoyance is the main cause. Included in psychosocial responses are sleep disturbance, disruption of daily activities, and interference with performance—all subjective responses that pertain to well-being and quality of life. Noise also has physical impacts such as hearing loss, tinnitus, hypertension, ischemic heart disease, and some forms of cardiovascular disease (Van Kempen et al., 2002). Stress-related health effects brought on by noise exposure can be psychological (feelings of depression, fear, resentment, discomfort, displeasure, anger), behavioral (isolation, aggression, abuse of alcohol, drugs, food, and tobacco), or somatic (cardiovascular, gastrointestinal, respiratory illness), and physical (hearing loss, tinnitus) (Porter et al., 1998).

Hearing loss or impairment can occur both from short-term exposure to high noise levels or long-term exposure to lower levels. Hearing loss can result in difficulties in communicating and feelings of isolation and depression. At 85 dB(A)<sup>8</sup>, roughly equivalent to the sound of a jack hammer, the risk of damage to the ear is about 10 percent. The odds of damage increases as the decibel level rises. A 24-hour exposure to sound levels of 70 dB(A) or less, roughly equivalent to a food blender, is not anticipated to result in any permanent hearing damage. Children and people who have demonstrated hereditary sensitivity to noise are considered to be the at-risk or sensitive groups (Alenius, 2001).

Annoyance or disturbance is the most common and most researched effect of noise. Noise annoyance is characterized by feelings of displeasure or discomfort towards a particular sound and results in interference with thoughts, feelings, or activities (Passchier-Vermeer and Passchier, 2000). Noise annoyance can result in psychosocial and psychosomatic health effects. The most common source of noise disturbance is road traffic. The random but usually constant nature of traffic noise contributes to its ability to annoy along with its intermittent sound level variations caused by motorcycles, for example, or peak and off-peak traffic patterns (Alenius, 2001). Noise annoyance can disrupt activities such as sleeping. Sleep disturbance can impair the normal functions performed by sleep, such as brain restoration and cardiovascular respite. It also has an effect on mood, fatigue, performance, cognitive abilities, vigilance, and can boost epinephrine levels which contributes to stress (Passchier-Vermeer and Passchier, 2000). Sensitive groups include the elderly, the sick, and shift workers. The maximum sound level should not exceed 45 dB(A), similar to a refrigerator, but is ideally around 30 dB(A) (Alenius, 2001).

Stress-related health effects of noise can give rise to psychological, behavioral, and somatic disorders. Studies are inconclusive in determining whether health effects of noise-related stress have long-term, chronic impacts or if they are transient or reversible in nature. Research has detected some impacts on blood pressure, clinical hypertension, ischemic heart disease and other cardiovascular disorders, biochemical effects, changes in the immune system, and potential

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<sup>8</sup> A-weighted sound level describes a receiver's noise level at a point in time



effects on the unborn child although the evidence to support effects on unborn children is limited (Porter et al., 1998).

In conclusion, research indicates there is sufficient evidence for a causal association between noise and the following health effects: annoyance, disruptions in performance by school children, sleep disturbance, mood, heart rate, hearing loss, and ischemic heart disease. There is limited evidence of a causal relationship for the following health effects, although an association between noise and health has been observed: performance in adults, hormones, forms of cardiovascular disease, biochemical effects, and effects on the immune system. Any attempts to draw a relationship between noise and psychiatric disorders, birth weight, or congenital defects were all either lacking in evidence or inconclusive (Porter et al., 1998).

The complexity of establishing a dose relationship between noise and health impacts stems from issues related to the nature of noise, data gathering methods, and the complication of causal factors. Sound level is only one factor that determines noise nuisance. Pitch, or frequency, is also important, as are duration and whether the sound is continuous, random, or repeated (Transportation Research Board & National Research Council, 2001). Also contributing to the complexity of the relationship are the means of conducting research and gathering data which primarily rely on subjective reports which are colored by the individual's ability to adapt to noise, one's attitude toward noise disturbance, and one's coping style (Porter et al., 1998) which calls to mind the adage, "what is one man's noise is another man's music." Finally, the causal factors themselves are complex. Genetic pre-disposition to disease, individual lifestyle choices, existing health conditions, and self-selection biases all contribute to the difficulty in determining the cause-effect relationship between noise and health impacts in simple terms (Porter et al., 1998).

So what are normal noise levels for an urban environment? Typically the noise level generated by two people having a conversation standing three feet apart is in the range of 60-65 dB(A). Noise levels in the home are usually considered acceptable in the 40-45 dB(A) range (Federal Highway Administration, 2004). A refrigerator at 3 feet away is about 45 dB(A), a washing machine is 65 dB(A), and a food blender is about 75 dB(A) (Federal Transit Administration, 2006). On the other hand, transit noises at 50 feet from the source are significantly higher. A city bus idling is about 75 dB(A), rail transit can range from 65 dB(A) in the station to around 95 dB(A) depending on the technology and track materials, and a horn can register around 90 dB(A) (Federal Transit Administration, 2006).

In contrast to noise, ground-borne vibration is an unusual occurrence for most people in their daily lives. Residential areas typically have vibration velocity levels of around 50 VdB (vibration decibels) or lower, well below the human perception level of about 65 VdB. People begin to experience annoyance at vibration levels of around 70 VdB and tend to be vocal about their annoyance at around 85 VdB. Light rail systems typically generate around 70 VdB or more near the tracks. Bulldozers and other heavy tracked construction equipment generate around 95 VdB at 50 feet from the source (Federal Transit Administration, 2006). Communities will vary in their acceptance of noise levels (Federal Transit Administration, 2006).

### **Built Environment**

Bearing in mind the Federal Transit Administration's noise impact criteria, people living in noisier communities should not be expected to deal with big increases in noise levels (Federal Transit Administration, 2006).

By virtue of the City of Atlanta being an urban environment, the noise levels residents contend with is already higher than in suburban or rural communities. According to the Federal Highway Administration (2004), urban environments have a continuous level of sound from around 50 dB(A) to 80 dB(A). However, decibel levels will spike higher than 80 dB(A) with intermittent noise such as car horns or road construction. Acceptability of noise levels also varies by time of day, so urban environments with residential land uses are expected to be quieter at night than during

the day, ideally around 40 dB(A) (Federal Highway Administration, 2004). People who have higher levels of noise tolerance or an ability to cope with higher noise levels may self-select into homes or jobs that have higher decibel levels, for example people who live near highways. However, others opt for more quiet environments and seek neighborhoods that do not abut excessive noise producers.

### **Land Use and Connectivity**

Research has consistently shown that neighborhoods with more destinations and a greater variety of destinations within walking and cycling distance will see a corresponding higher level of non-motorized travel, especially for non-work trips (Cervero and Radisch, 1996; Boarnet and Sarmiento, 1998; Pikora et al., 2002; Hoehner et al., 2005; Lee and Moudon, 2006). Work location is typically constrained and may be too far to reach by foot or bicycle alone. Badland et al. (2008) found that distance was the greatest barrier to walking for commuting purposes, but also that street connectivity is strongly associated with increased travel physical activity to work or school, and that mixture of land use is second most strongly associated. Additionally, Pucher and Buehler (2006) suggested that shorter distances to work influenced more Canadians to cycle than Americans, and Moudon et al., (2007) concluded that higher density, shorter distances to stores, and slightly longer distances to office or mixed-use buildings resulted in more walking. Distance and land use factors have also been found to affect the percentage of children who walk or bicycle to school (Ulfarsson and Venkataraman, 2008). However, some research suggests that people overestimate the distance to nearby destinations, which affects their decision to walk to them (McCormack et al., 2008).

### **Transit**

Recent declines in walking and biking for work transportation are not necessarily indicative of a growing preference for automobile travel. Several polls have shown that between 13 percent and 20 percent of people state that walking and biking are their preferred modes of travel. Of those that had ridden a bike in the previous year, 46 percent said they would commute to work by bike if bike lanes were available, and 53 percent would commute by bike if there were dedicated paths (Rodale Press, 1992; Oregon Department of Transportation, 1995). In many studies, the most important factor which determined the decision to walk or bike for transportation was the distance traveled (Cervero, 1996; Handy, 1996; Loutzenheiser, 1997). Given that most walking trips are less than one kilometer, shorter trips tend to encourage pedestrian travel (Antonakos, 1995). Despite this, automobile use often dominates trips of short distance in the U.S. and walking for transportation decreases as the number of automobiles per household increases (U.S. Department of Transportation et al., 1997).

Several countries other than the U.S. are less dependent on the automobile for transportation needs. Newman and Kenworthy (1991) found that the average percentage of workers who walked or biked to work was 5 percent in the U.S and Australia, 6 percent in Canada, 21 percent in Europe, 24 percent in Russia, and 25 percent in Asia. Across all countries studied, the proportion of workers who walked or biked to work was positively associated with the number of job opportunities in the area, population density, and use of public transportation.

The layout of cities and communities and their transportation infrastructure are important factors in determining whether people walk or drive as a means of transportation (Moudon et al., 1997; Frank and Engelke, 2001). For example, connectivity, density, and land use have all been found to influence the levels of pedestrian travel within cities even after individual variables were controlled for in the analyses (Newman and Kenworthy, 1989; Holtzclaw, 1990; Dunphy and Fisher, 1994; Frank and Pivo, 1994; Holtzclaw, 1994; Kockelman, 1997; Pushkarev and Zupan, 1997).

An important element of a traditional community mobility plan includes mass transit. Transit use is 10-45 percent higher in transit orientated (traditional) neighborhoods than in newer auto-dependent neighborhoods (Messenger and Ewing, 1996). In the San Francisco Bay Area, individuals living in transit-orientated neighborhoods made 70 percent more transit trips and 120 percent more pedestrian/biking trips than individuals living in auto-orientated neighborhoods (Cervero and Gorham, 1995). Transit ridership is influenced by both residential and employment density near stations (Cervero, 1993; Cervero, 1994; Holtzclaw, 1994).

In addition, the results of the study indicated that rail users (more so than bus users), minorities, households earning less than \$15,000 per year, and people in high-density urban areas were most likely to achieve recommended physical activity levels by walking to transit. These groups are also the most likely to suffer from obesity and overweight. Finally, the study found that 72 percent of single-segment walking trips are less than 10 minutes in duration which is under the Surgeon General's recommendation of accumulating physical activity in periods of 10 minutes or more. However, it was unclear from research whether or not accumulating these shorter periods of activity also has a positive health benefit (Besser and Dannenberg, 2005).

Recent research in New York found that adding a commuter rail stop not only resulted in new riders who previously drove, but meaningful increases in the level of physical activity of existing commuters. They reported increasing their total amount of activity during the week, in many cases enough to move them from the "insufficient" to "meeting recommendations" categories of physical activity (Greenberg and Renne, 2005).

Numerous factors have been found to influence an individual's decision of what mode to take for commuting to work. Cervero (1988) found an association between the percentage of work trips by walking or bicycling and the share of commercial floor space devoted to retail around the workplace. Research showed that bringing additional land uses (e.g., places to shop, eat or play) to a suburban workplace increases the number of non-work trips that can be taken on foot or bike and accessed directly from the work site without the need for a motor vehicle. Among workers at 57 large office developments in the U.S. every 10 percent increase in floor space dedicated to retail/commercial use was related to a three percent increase in transit and ride-sharing commutes (Cervero, 1988). In six large suburban-area centers, having a retail component within an office building cut vehicle trip rates eight percent per employee. Buildings with mixed uses also generated an average three percent more commute trips using transit (Cervero, 1991).

## Appendix A.3 – Stakeholder Involvement Materials (Selected)

### A.3.1 – Neighborhood Organizations

**Ardmore Park Neighborhood Association** | NPU-E & CD-8

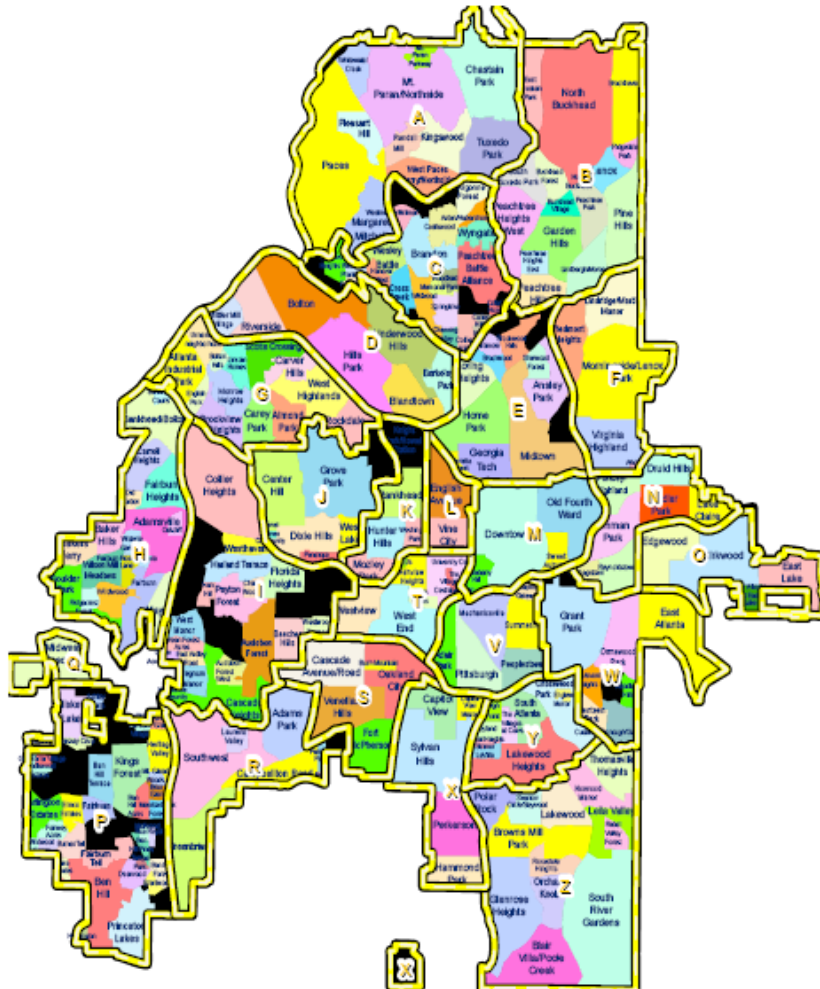
**Brookwood Civic Association**

**Brookwood Hills Community Club Civic Organization** | NPU-E & CD-7

**Collier Hills Civic Association** | NPU-C & CD-8

**Collier Hills North Civic Association** | NPU-C & CD-8

**Loring Heights Neighborhood Association** | NPU-E & CD-8



## Appendix A.3 – Stakeholder Involvement Materials (cont.)

### A.3.2 – Letter to Piedmont Hospital [24 January 2008]

24 January 2008

R. Timothy Stacks  
President and CEO  
Piedmont Hospital  
1968 Peachtree Road NW  
Atlanta, GA 30309

Dear Mr. Stacks,

I am writing to tell you about a study we are beginning. The Robert Wood Johnson Foundation has given Georgia Tech's Center for Quality Growth and Regional Development (CQGRD) funding to conduct a Health Impact Assessment (HIA) to explore how anchor institutions in urban areas, like Piedmont Hospital, impact the health of the people who live and work in close proximity. This study is building on the Atlanta BeltLine Health Impact Assessment that we completed in May 2007.

As you know, the BeltLine is an ambitious project to add parks, trails, transit and new developments around the core of the city. Piedmont Hospital, which is located near one of the BeltLine's key redevelopment nodes, is an ideal case study to examine how anchor institutions impact the surrounding neighborhoods. Furthermore, significant public and private investment in the form of transportation improvements and park and trail development will be targeted in this area due to the BeltLine and other planning efforts. Therefore, the time is right to consider ways to improve public health and promote active living in this area through improvements to the urban environment.

A Health Impact Assessment, or HIA, is a process that uses a variety of methods and approaches to identify and measure potential health impacts, both positive and negative, that may result from a particular policy or project. Furthermore, an HIA seeks to link these impacts to a given segment of the population (for example, children, older adults, people living in poverty, or residents of a particular neighborhood). The final product of an HIA is a set of evidence-based recommendations intended to inform decision-makers and the general public about the health-related issues associated with the project. The recommendations provide practical solutions that seek to magnify positive health impacts, and remove or minimize negative impacts. The Centers for Disease Control and Prevention will be providing technical assistance to explore how the urban environment in which Piedmont Hospital is set can impact community health.

We welcome the opportunity to talk with you and your colleagues about this study and invite you to designate a representative of Piedmont Hospital to serve on the Advisory Committee. The involvement of Piedmont Hospital, as well as several of the major decision makers that influence the area, is critical to the success of this project. If you would like more information please contact me at 404.385.5133. I look forward to talking with you.

Sincerely yours,

Catherine L. Ross, Ph.D.  
Director, Center for Quality Growth and Regional Development and Georgia Tech Harry West  
Chair for Quality Growth



## Appendix A.3 – Stakeholder Involvement Materials (cont.)

### A.3.3 – Letter to Neighborhood Association Presidents [21 March 2008]

Dear Community Leader,

Georgia Tech's Center for Quality Growth and Regional Development, with assistance from the Centers for Disease Control and Prevention, is conducting a study to identify the potential health impacts on people living and working near a major institution, like a hospital. Therefore, this study is focused on the neighborhoods surrounding Piedmont Hospital. The project, called a Health Impact Assessment, is funded by the Robert Wood Johnson Foundation, a national foundation dedicated to improving health and healthcare for Americans.

#### **About the Project**

This Health Impact Assessment (HIA) is for the area roughly bounded by Northside Drive, Interstates 75 and 85, Peachtree Battle Avenue, and Lindbergh Drive. The purpose of the HIA is to identify positive and negative health impacts of major institutions and developments in your neighborhood, and to recommend designs, policies and practices to improve community health. This HIA will be completed in the summer of 2008.

An HIA is a process that uses a variety of scientific and analytical tools to identify and measure potential health impacts (both positive and negative) that may result from a particular policy, project or practice. For instance, HIA's may examine such factors as negative impacts caused by extreme traffic congestion on major traffic arteries (e.g. accident and injury/fatality rates, access to facilities and services, and physical activity levels of residents in neighborhoods). Furthermore, an HIA links potential impacts to specific populations like residents of particular neighborhoods, children, people with disabilities, or older adults. An HIA informs residents and decision makers about the health-related issues and recommends practical solutions to magnify positive health impacts, and remove or minimize negative impacts.

#### **Community Participation is Very Important**

As part of this HIA Georgia Tech has created a survey to find out how residents experience their neighborhood, and how their neighborhood affects their health and quality of life. To make sure that everyone gets a chance to be heard, we need your help to get your members involved. We ask that you encourage residents to take the survey by making an announcement on your website, in your email and print notices, and at community events or meetings.

Following is a sample announcement (feel free to alter as needed) that you could use to tell your members about this project and the survey:

**How does your neighborhood affect your health and quality of life?** Georgia Tech wants to know what you think impacts your health and quality of life to produce a report with actionable recommendations to improve our community. They are using an innovative process to conduct a study to understand the potential health impacts of the community design, amenities, and the major institutions and new developments near your home.

This project will result in: 1) research findings and 2) specific recommended actions to protect and improve community conditions and health (e.g. alleviation of traffic gridlock on major traffic arteries or improving intersections). These proposed practical and specific solutions will

be shared with neighbors and other stakeholders and presented to governmental and institutional decision makers for implementation. To share your invaluable opinions with them please take the survey called *Your Neighborhood and Your Health*. The survey will be available through April 15. **To take the survey go to [www.cqgrd.gatech.edu/HIASurvey](http://www.cqgrd.gatech.edu/HIASurvey) or call 404-385-5133 and a paper survey will be mailed to you.**

Please contact Georgia Tech if you have questions, if you would like to receive paper copies of the survey, and/or if you would like a member of the research team to attend your neighborhood meeting to briefly explain the project and hand out surveys. The project contact is Karen Leone de Nie, research scientist at Georgia Tech, at [k.leonedenie@gatech.edu](mailto:k.leonedenie@gatech.edu) or 404.385.5125.

Thank you for your consideration.

Sincerely Yours,

Karen Leone de Nie  
Research Scientist  
Georgia Tech's Center for Quality Growth and Regional Development

## Appendix A.3 – Stakeholder Involvement Materials (cont.)

### A.3.4 – Announcement in Neighborhood Newsletters/Webbsites

An Important Invitation from Joe Gardner, AIA President of Brookwood Alliance, Inc. (an umbrella organization comprising Brookwood Hills Community Club, Inc.; Ardmore Park Neighborhood Association, Inc.; Brookwood Civic Association, Inc.; Collier Hills Civic Association; Collier Hills North Neighborhood Association, Inc. and Loring Heights Neighborhood Association, Inc.)

April 20, 2008; Richard Rich Auditorium; Piedmont Hospital; 7:00PM

Please put this important date and time on your Calendar.

Featured Presentation: Overview, Findings and Conclusions to date of a Health Impact Assessment (HIA) encompassing the Brookwood Alliance Neighborhoods

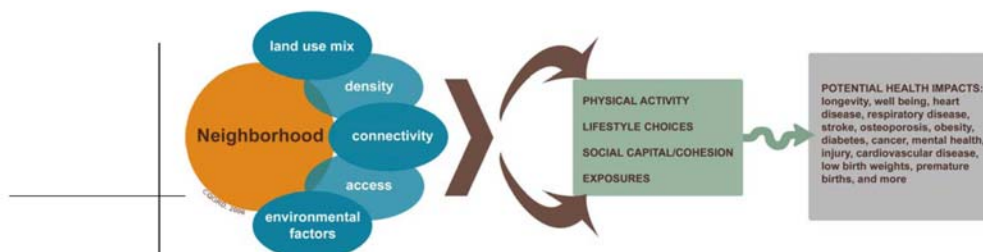
Speaker: Dr. Catherine Ross, Director Center for Quality Growth and Regional Development at Georgia Tech

Georgia Tech's Center for Quality Growth and Regional Development, with assistance from the Centers for Disease Control and Prevention, is conducting this Health Impact Assessment (HIA) to identify the potential health impacts on people living and working near a major institution, like Piedmont Hospital. Examples of some specific health impacts that will be examined are traffic gridlock on major arteries, safety concerns to pedestrians and motorists, air pollution, dysfunctional and dangerous intersections, etc. Specific recommendations resulting from the HIA will be shared with neighbors, other stakeholders and presented to governmental and institutional decision makers for action.

Dr. Catherine Ross will provide an overview of the Health Impact Assessment and will present conclusions developed thus far in the Study. There will be ample opportunity for discussion, questions and answers after her presentation. Your voice will be heard as an invaluable input into the HIA study process.

Dr. Ross possesses more than thirty years experience working in the fields of transportation and urban planning, working as a researcher and holding significant management positions in the public and private sector at both the local and national levels. Dr. Ross has authored more than 250 reports, articles, books and monographs. Dr. Ross is Georgia Tech's College of Architecture's first endowed faculty member where she holds the Harry West Chair of City and Regional Planning and directs the Center for Quality Growth and Regional Development (CQGRD). She served as the first Executive Director of the Georgia Regional Transportation Authority (GRTA), and was recently made a member of the National Academy of Public Administration. Dr. Ross has served on the Executive e Council of the National Academy of Sciences and as President of the National Association of Collegiate Schools of Planning.





neighborhoods include Ardmore Park, Brookwood, Brookwood Hills, Collier Hills, Collier Hills North, Colonial Homes, Peachtree Hills, and Peachtree Battle, with surrounding influences in Loring Heights, Berkeley Park, and Underwood Hills.

#### What is a healthy neighborhood?

A healthy neighborhood promotes active living through good design — appropriate density, land use mix, street connectivity, awareness of the human scale, attention paid to aesthetics — and by being safe and being perceived as safe. Healthy neighborhoods promote accessibility both within and between neighborhoods. They provide opportunities to be actively engaged with family and community and buffer inhabitants from unhealthful things. Finally, a healthy neighborhood provides affordable and appropriate housing choices for residents in all stages of life.

The neighborhoods around Piedmont Hospital benefit from access to local health care, but they are also face the realities of the presence of a large anchor institution like a hospital, which tends to increase automobile traffic, operates 24-hours a day, and as a large land use can become an obstacle to residents' ability to access nearby amenities and services. The purpose of this HIA is to identify opportunities to improve the physical environment for both the hospital and residents, all in the name of health promotion.

#### Why now?

This project builds on the Atlanta BeltLine Health Impact Assessment (HIA), which was completed by CQGRD and CDC in May 2007. The BeltLine is an ambitious project to add parks, trails, transit and new developments around the core of the city. Piedmont Hospital, which is located in one of the BeltLine's key redevelopment nodes, is an ideal case study to examine how anchor institutions impact the surrounding neighborhoods. It is set in a largely residential neighborhood, but also adjacent to Atlanta's signature corridor, Peachtree Street. Furthermore, significant public and private investment will be targeted in this area in the near future due to the BeltLine and other planning efforts. Therefore, the time is right to consider ways to improve public health and promote active living in this area.

#### Get involved

To learn more the project and to get involved visit [www.cqgrd.gatech.edu/HospitalHIA](http://www.cqgrd.gatech.edu/HospitalHIA). From this site you can get project updates, take a brief survey called *Your Neighborhood and Your Health*, and subscribe to receive project notices. Your participation is necessary to make health promoting changes in your neighborhood. If you have any questions about the project please contact Georgia Tech's Center for Quality Growth at 404.385.5133.

#### About CQGRD

Georgia Institute of Technology's Center for Quality Growth and Regional Development (CQGRD) helps achieve a sustainable, equitable, superior quality of life through effective planning, policy, and design. Since its inception, the Center has been an active participant in the national and international dialogue about health outcomes related to community design.

**Catherine L. Ross, Ph.D.**, possesses extensive experience in the fields of transportation and urban planning, working as a researcher and consultant holding significant management positions in the public and private sector at the local, national and international level. She has authored more than 300 reports, articles, books and monographs. She holds Georgia Tech's College of Architecture's Harry West Chair of City and Regional Planning and directs CQGRD, and was the first Executive Director of the Georgia Regional Transportation Authority.

**Karen Leone de Nio, AICP**, is a researcher and city planner at CQGRD. Her work focuses on the evaluation of development regulation, health and the built environment relationships, and regional sustainable development. Among of her most recent efforts is a project, funded by the Robert Wood Johnson Foundation, to assess the public health impacts of the Atlanta BeltLine.

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760 Spring Street, Suite 213, Atlanta, GA 30308 | P: 404.385.5133 F: 404.385.5127 W: [www.cqgrd.gatech.edu](http://www.cqgrd.gatech.edu)



## APPENDIX A.3 – Stakeholder Involvement Materials (cont.)

### A.3.6 – HIA Survey Questions and Results

1. Would you say that in general your health is—								
Very Good	Average				Very Poor	Refused	Rating Average	
31.0% (49)	<b>39.9% (63)</b>	17.7% (28)	10.1% (16)	1.3% (2)	0.0% (0)	0.0% (0)	0.0% (0)	2.11

2. Do you think that any of the following conditions affect your health? (We want to know what types of neighborhood amenities affect your health.)								
	Positive effect on my health			Neither positive nor negative effect on my health			Negative effect on my health	Rating Average
Having access to places (parks, trails, recreation centers, sidewalks) within my neighborhood to be physically active	<b>82.6% (128)</b>	11.6% (18)	1.3% (2)	4.5% (7)	0.0% (0)	0.0% (0)	0.0% (0)	1.28
Being safe from crime within my neighborhood	<b>74.4% (116)</b>	14.7% (23)	9.6% (15)	1.3% (2)	0.0% (0)	0.0% (0)	0.0% (0)	1.38
Being safe from injury within my neighborhood	<b>62.6% (97)</b>	26.5% (41)	6.5% (10)	3.9% (6)	0.6% (1)	0.0% (0)	0.0% (0)	1.54
Having traffic congestion within my neighborhood	5.7% (9)	8.3% (13)	4.5% (7)	5.1% (8)	12.7% (20)	22.9% (36)	<b>40.8% (64)</b>	5.43
Having safe places to cross major thoroughfares within my neighborhood	<b>50.0% (78)</b>	25.0% (39)	14.7% (23)	3.2% (5)	1.3% (2)	4.5% (7)	1.3% (2)	1.99
Having convenient access to grocery stores within my neighborhood	<b>36.5% (57)</b>	31.4% (49)	17.9% (28)	12.8% (20)	0.0% (0)	0.6% (1)	0.6% (1)	2.13
Having convenient access to health care within my neighborhood	<b>40.4% (63)</b>	28.2% (44)	14.7% (23)	14.7% (23)	0.6% (1)	1.3% (2)	0.0% (0)	2.11
Having convenient access to job and educational opportunities within my neighborhood	<b>29.0% (45)</b>	27.1% (42)	18.7% (29)	21.9% (34)	0.6% (1)	0.6% (1)	1.9% (3)	2.48
Having convenient access to public transportation	25.8% (40)	<b>27.1% (42)</b>	14.8% (23)	<b>27.1% (42)</b>	2.6% (4)	1.3% (2)	1.3% (2)	2.63
Having convenient access to automobile travel ways (roads, highways)	23.9% (37)	<b>32.3% (50)</b>	18.1% (28)	22.6% (35)	1.9% (3)	1.3% (2)	0.0% (0)	2.50

3. How often do you exercise?		
	Response Percent	Response Count
At least five days a week	22.3%	35
<b>Three to four days a week</b>	<b>42.7%</b>	67
One or two days a week	24.8%	39
Two or three times a month	7.0%	11
Never	3.2%	5

4. How much of your exercise do you do in your neighborhood? (This can include walking and jogging on neighborhood trails and sidewalks, biking on neighborhood streets and trails, or participating in sports or exercise in neighborhood parks or recreational facilities.)		
	Response Percent	Response Count
All (100%)	16.6%	26
<b>Most</b>	<b>35.7%</b>	56
Half (50%)	21.0%	33
Less than Half	19.7%	31
None	7.0%	11

5. If you exercise in your neighborhood, why types of exercise do you do? (mark all that apply)		
	Response Percent	Response Count
<b>Walk</b>	<b>86.2%</b>	131
Jog/Run	43.4%	66
Bicycle	15.1%	23
Team or individual sports (e.g. softball, tennis, basketball, soccer)	10.5%	16
Exercise classes	11.8%	18
Other (please specify)	17.8%	27

6. In your opinion, automobile traffic within your neighborhood is...								
	Light			Average (similar to other neighborhoods)			Heavy	Rating Average
Traffic is...	4.5% (7)	7.8% (12)	11.0% (17)	11.7% (18)	18.8% (29)	21.4% (33)	<b>24.7% (38)</b>	4.95

7. How safe from INJURY do you feel in your neighborhood?								
	Safe		Neutral			Unsafe		Rating Average
from INJURY	14.8% (23)	<b>30.3% (47)</b>	19.4% (30)	16.8% (26)	12.3% (19)	4.5% (7)	1.9% (3)	3.03

8. If you feel unsafe, why? (mark all that apply)		
	Response Percent	Response Count
Poor lighting	28.2%	37
Poor sidewalk conditions	58.8%	77
Unattended animals	2.3%	3
<b>Fast automobile traffic</b>	<b>70.2%</b>	<b>92</b>
Difficult to cross intersections	46.6%	61
Congested roads	41.2%	54
Crime rates	52.7%	69
Poorly maintained property	9.2%	12
Other (please specify)	22.1%	29

10. What would have to change to make you walk or bike to grocery store more often? (mark all that apply)		
	Response Percent	Response Count
<b>Sidewalks/sidewalk improvements</b>	<b>43.4%</b>	<b>62</b>
Better street lighting	16.8%	24
Bike lanes	21.7%	31
Multi use trail	18.9%	27
Traffic calming	36.4%	52
Shorter distance	28.7%	41
A different store	23.8%	34
Other (please specify)	30.1%	43

9. How often do you walk or bike to the grocery store?		
	Response Percent	Response Count
Several times a week	5.5%	8
At least once a month	23.4%	34
A few times a year	32.4%	47
<b>Never</b>	<b>38.6%</b>	<b>56</b>

11. How often do you walk or bike to other types of stores?		
	Response Percent	Response Count
Several times a week	9.6%	14
At least once a month	33.6%	49
<b>A few times a year</b>	<b>39.0%</b>	<b>57</b>
Never	17.8%	26

12. What would have to change to make you walk or bike to other types of stores more often? (mark all that apply)		
	Response Percent	Response Count
Sidewalks/sidewalk improvements	49.3%	68
Better street lighting	23.2%	32
Bike lanes	21.7%	30
Multi use trail	21.0%	29
<b>Traffic calming</b>	<b>50.0%</b>	69
Shorter distance	17.4%	24
A different store	10.1%	14
Other (please specify)	26.8%	37

13. What would have to change to make you walk or bike to restaurant/cafe more often? (mark all that apply)		
	Response Percent	Response Count
<b>Sidewalks/sidewalk improvements</b>	<b>41.7%</b>	58
Better street lighting	28.1%	39
Bike lanes	18.7%	26
Multi use trail	16.5%	23
Traffic calming	34.5%	48
Shorter distance	20.9%	29
A different restaurant or cafe	30.2%	42
Other (please specify)	25.9%	36

13. How often do you walk or bike a restaurant or cafe?		
	Response Percent	Response Count
Several times a week	7.3%	11
At least once a month	34.7%	52
<b>A few times a year</b>	<b>39.3%</b>	59
Never	18.7%	28

14. How often do you walk or bike a park or playground?		
	Response Percent	Response Count
Several times a week	31.2%	44
<b>At least once a month</b>	<b>32.6%</b>	46
A few times a year	24.8%	35
Never	11.3%	16

15. What would have to change to make you walk or bike to park/playground more often? (mark all that apply)		
	Response Percent	Response Count
<b>Sidewalks/sidewalk improvements</b>	<b>43.9%</b>	<b>47</b>
Better street lighting	20.6%	22
Bike lanes	15.9%	17
Multi use trail	24.3%	26
Traffic calming	30.8%	33
Shorter distance	20.6%	22
A different type of park or playground	13.1%	14
Other (please specify)	32.7%	35

17. What would have to change to make you walk or bike to a healthcare facility more often? (mark all that apply)		
	Response Percent	Response Count
Sidewalks/sidewalk improvements	25.7%	26
Better street lighting	13.9%	14
Bike lanes	9.9%	10
Multi use trail	8.9%	9
Traffic calming	23.8%	24
Shorter distance	27.7%	28
A different healthcare facility/provider	11.9%	12
<b>Other (please specify)</b>	<b>36.6%</b>	<b>37</b>

16. How often do you walk or bike a healthcare facility?		
	Response Percent	Response Count
Several times a week	2.9%	4
At least once a month	12.1%	17
<b>A few times a year</b>	<b>44.3%</b>	<b>62</b>
Never	40.7%	57

18. How often do you walk or bike to work?		
	Response Percent	Response Count
Several times a week	25.6%	11
At least once a month	7.0%	3
A few times a year	9.3%	4
<b>Never</b>	<b>58.1%</b>	<b>25</b>



19. What would have to change to make you walk or bike to work more often? (mark all that apply)		
	Response Percent	Response Count
Sidewalks/sidewalk improvements	15.9%	14
Better street lighting	6.8%	6
Bike lanes	22.7%	20
Multi use trail	13.6%	12
Traffic calming	15.9%	14
<b>Shorter distance</b>	<b>61.4%</b>	<b>54</b>
Other (please specify)	34.1%	30

20. How often do you walk or bike to school?		
	Response Percent	Response Count
Several times a week	8.3%	1
At least once a month	8.3%	1
A few times a year	8.3%	1
<b>Never</b>	<b>75.0%</b>	<b>9</b>

21. What would have to change to make you walk or bike to school more often? (mark all that apply)		
	Response Percent	Response Count
Sidewalks/sidewalk improvements	18.8%	6
Better street lighting	0.0%	0
Bike lanes	15.6%	5
Multi use trail	9.4%	3
Traffic calming	18.8%	6
<b>Shorter distance</b>	<b>59.4%</b>	<b>19</b>
A different school	9.4%	3
Other (please specify)	25.0%	8

22. How does living near these major institutions and destinations impact your health and quality of life?					
	Positive effect on my health	Have no effect on my health	Negative effect on my health	Both positive & negative effects on my health	Don't know
Piedmont Hospital	38.1% (59)	23.2% (36)	7.7% (12)	27.1% (42)	3.9% (6)
Shepherd Center	5.8% (9)	68.2% (105)	3.2% (5)	3.2% (5)	19.5% (30)
Peachtree Road	15.4% (23)	22.1% (33)	14.8% (22)	45.0% (67)	2.7% (4)
Northside Drive	10.7% (16)	42.3% (63)	14.8% (22)	26.8% (40)	5.4% (8)
Atlantic Station	28.7% (43)	46.7% (70)	6.0% (9)	12.0% (18)	6.7% (10)

23. How do you think the proposed plan in and around your neighborhood will impact your health and quality of life?					
	Positive effect on my health	Neither positive nor negative effect on my health	Negative effect on my health	Both positive & negative effects on my health	Don't know
BeltLine Transit	37.9% (58)	9.2% (14)	13.7% (21)	14.4% (22)	24.8% (38)
BeltLine Park Improvements	45.6% (68)	13.4% (20)	6.7% (10)	9.4% (14)	24.8% (37)
BeltLine Trails	49.0% (72)	10.9% (16)	9.5% (14)	12.9% (19)	17.7% (26)
BeltLine Redevelopment Area	17.4% (26)	16.1% (24)	12.1% (18)	11.4% (17)	43.0% (64)
Peachtree Streetcar	26.7% (40)	20.0% (30)	24.0% (36)	10.7% (16)	18.7% (28)
Peachtree Corridor	14.9% (22)	8.8% (13)	4.7% (7)	6.8% (10)	64.9% (96)

24. Are you...?		
	Response Percent	Response Count
Male	44.7%	67
<b>Female</b>	<b>55.3%</b>	<b>83</b>

25. What is your age?		
	Response Percent	Response Count
0-17 years old	0.0%	0
18-29 years old	7.2%	11
<b>30-49 years old</b>	<b>47.4%</b>	<b>72</b>
50-69 years old	40.1%	61
70 years old or older	5.3%	8

26. Which one of these groups would you say best represents your race?		
	Response Percent	Response Count
<b>White</b>	<b>93.4%</b>	<b>142</b>
Asian	0.0%	0
American Indian or Alaska Native	0.0%	0
Black or African American	2.0%	3
Native Hawaiian or other Pacific Islander	0.0%	0
Other (please specify)	4.6%	7

27. What is the highest grade or year of school you completed?		
	Response Percent	Response Count
Never attended school or only attended kindergarten	0.0%	0
Grades 1 through 8 (Elementary)	0.0%	0
Grades 9 through 11 (Some high school)	0.0%	0
Grade 12 or GED (High school graduate)	0.0%	0
College 1 year to 3 years (Some college, technical school or associate degree)	6.0%	9
College 4 years (College graduate)	35.8%	54
<b>Post grad or professional degree</b>	<b>58.3%</b>	<b>88</b>

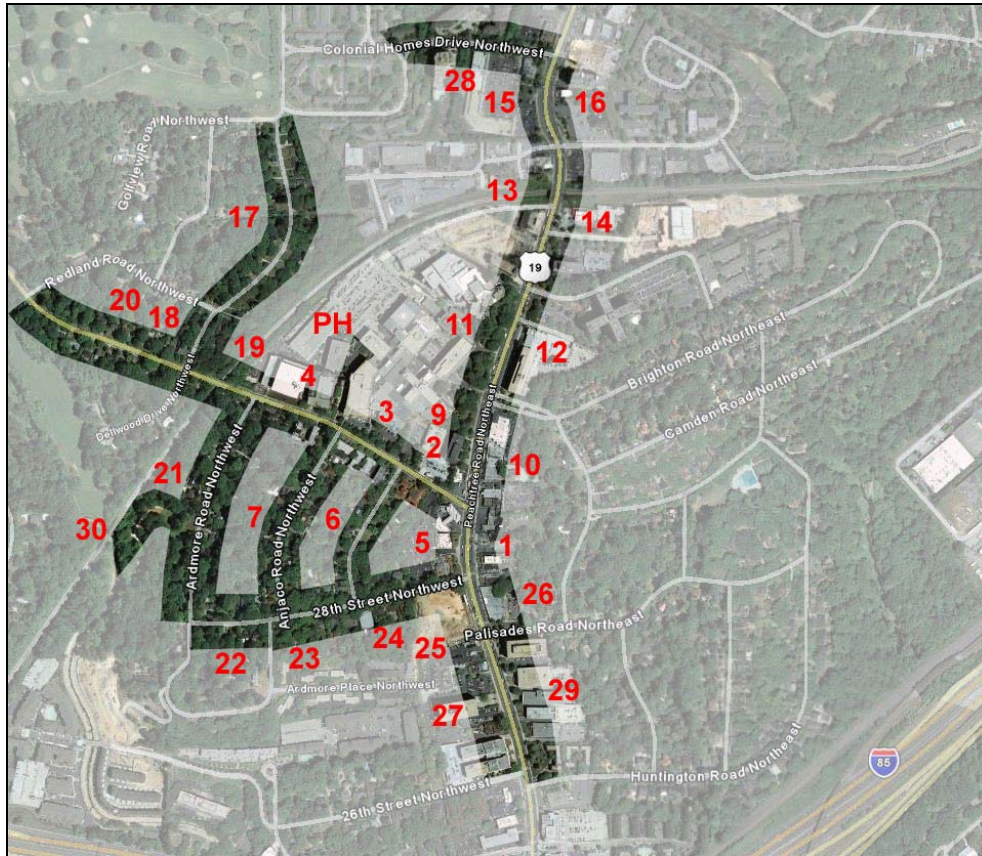
28. What is your annual household income from all sources?		
	Response Percent	Response Count
Less than \$10,000	0.8%	1
Between \$10,000 – 25,000	0.8%	1
Between \$25,000 - \$50,000	2.3%	3
Between \$50,000 - \$75,000	6.0%	8
<b>\$75,000 or more</b>	<b>90.2%</b>	<b>120</b>

# Appendix A.4 – Study Area Walkability Audit

## A.4.1 – Walkability Audit Data Sheet

<b>Name:</b> _____ <b>Segment:</b> _____	<b>Date:</b> _____ <b>Time:</b> _____	<b>Study Area:</b> _____ <b>Weather:</b> _____						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>								
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>								
<b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b>								
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>								
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input type="checkbox"/>								
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input type="checkbox"/>								
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>								
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b>								
<b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> >4 <input type="checkbox"/>								
<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>								
<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections _____								
<b>C. ROAD ATTRIBUTES (skip if path only)</b>								
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross _____ Maximum # of lanes to cross _____								
<b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): _____								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">0-5</td> <td style="padding: 2px;">6-25</td> <td style="padding: 2px;">26+</td> </tr> <tr> <td style="text-align: center; width: 30px;">1</td> <td style="text-align: center; width: 30px;">2</td> <td style="text-align: center; width: 30px;">3</td> </tr> </table>			0-5	6-25	26+	1	2	3
0-5	6-25	26+						
1	2	3						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input type="checkbox"/>								
<b>D. WALKING/CYCLING ENVIRONMENT</b>								
<b>25. Roadway/path lighting</b> Road-oriented lighting <input type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and building maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> Enter 1, 2, 3, or 4 where 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly ... is attractive for walking. _____ ... is attractive for cycling. _____ ... feels safe for walking. _____ ... feels safe for cycling. _____								

## A.4.2 – Walkability Audit Segment Map



Section	Segment Name	Begin Intersection	End Intersection
1	Peachtree Rd NE – East Side	28 <sup>th</sup> St S	Collier Rd NW
2	Collier Rd NW	Peachtree Rd NE	Wycliff Rd NW
3	Collier Rd NW	Wycliff Rd NW	Anjaco Rd NW
4	Collier Rd NW	Anjaco Rd NW	Ardmore Rd NW
5	Peachtree Rd NE – West Side	28 <sup>th</sup> St NW	Collier Rd NW
6	Wycliff Rd NW	28 <sup>th</sup> St NW	Collier Rd NW
7	Anjaco Rd NW	28 <sup>th</sup> St NW	Collier Rd NW
9	Peachtree Rd NE – West Side	Collier Rd NW	Brighton Rd NE
10	Peachtree Rd NE – East Side	Collier Rd NW	Brighton Rd NE
11	Peachtree Rd NE – West Side	Brighton Rd NE	Peachtree Valley Rd NE
12	Peachtree Rd NE – East Side	Brighton Rd NE	Peachtree Valley Rd NE
13	Peachtree Rd NE – West Side	Peachtree Valley Rd NE	Bennett St NW
14	Peachtree Rd NE – East Side	Peachtree Valley Rd NE	Bennett St NW
15	Peachtree Rd NE – West Side	Bennett St NW	Colonial Homes Dr NW
16	Peachtree Rd NE – East Side	Bennett St NW	Colonial Homes Dr NW
17	Dellwood Dr NW	Golf View Rd	Redland Rd NW
18	Dellwood Dr NW	Redland Rd NW	Collier Rd NW
19	Collier Rd NW	Ardmore Rd NW	Dellwood Dr NW
20	Collier Rd NW	Dellwood Dr NW	Redland Rd NW
21	Ardmore Rd NW	28 <sup>th</sup> St NW	Collier Rd NW
22	28 <sup>th</sup> St NW	Ardmore Rd NW	Anjaco Rd NW
23	28 <sup>th</sup> St NW	Anjaco Rd NW	Wycliff Rd NW
24	28 <sup>th</sup> St NW	Wycliff Rd NW	Peachtree Rd NE
25	Peachtree Rd NE – West Side	Palisades Rd NE	28 <sup>th</sup> St NW
26	Peachtree Rd NE – East Side	Palisades Rd NE	28 <sup>th</sup> St NW
27	Peachtree Rd NE – West Side	26 <sup>th</sup> St NW	Palisades Rd NE
28	Colonial Homes Dr NW	Peachtree Rd NE	S. Colonial Homes Cir
29	Peachtree Rd NE – East Side	26 <sup>th</sup> St NW	Palisades Rd NE
30	Tanyard Creek Park PATH	Ardmore Rd NW	None

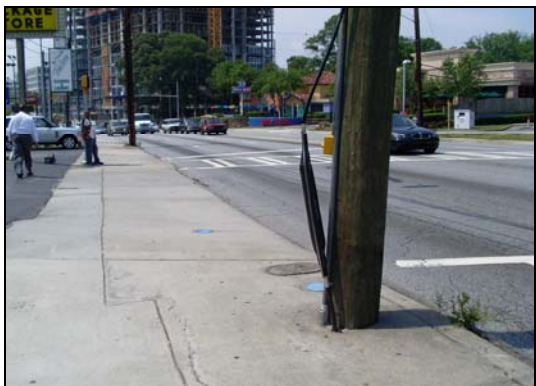
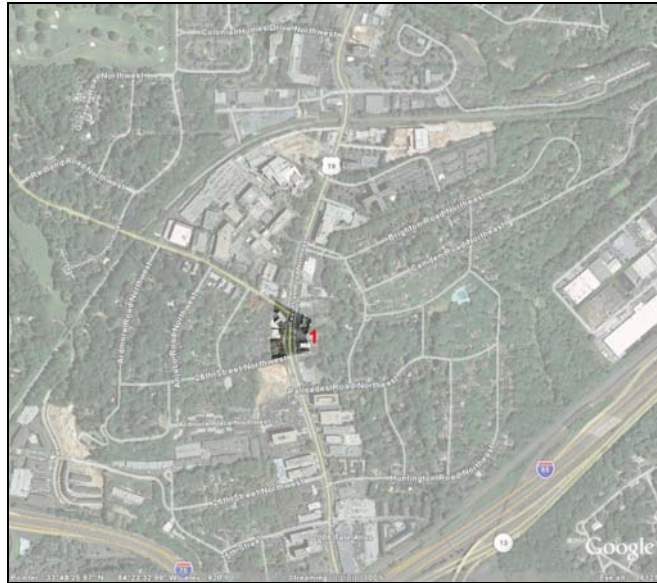


## A.4.3 – Walkability Audit Segment Analysis

### Segment 1: Peachtree Road NE (East Side)

**Beginning Intersection:** 28th Street

**Ending Intersection:** Collier Road NW



## Segment 1: Peachtree Road NE (East Side)

Beginning Intersection: 28th Street

Ending Intersection: Collier Road NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 1	<b>Date:</b> June 3, 2008 <b>Time:</b> 12:09 PM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>								
<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>2</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>3</u> <b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <input type="text"/> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input checked="" type="checkbox"/> No bus stop <input type="checkbox"/> <b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>3</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>3</u> ... feels safe for cycling. <u>3</u>								

## Segment 2: Collier Road NW

**Beginning Intersection:** Peachtree Road NE

**Ending Intersection:** Wycliff Road NW



## Segment 2: Collier Road NW

Beginning Intersection: Peachtree Road NE

Ending Intersection: Wycliff Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 2	<b>Date:</b> June 3, 2008 <b>Time:</b> 12:30 PM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>5</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>      </u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input checked="" type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input checked="" type="checkbox"/> Good (no litter/graffiti/broken facilities) <input type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>						
	<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>3</u> ... is attractive for cycling. <u>4</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>4</u>								



### Segment 3: Collier Road NW

**Beginning Intersection:** Wycliff Road NW

**Ending Intersection:** Anjaco Road NW





## Segment 3: Collier Road NW

Beginning Intersection: Wycliff Road NW

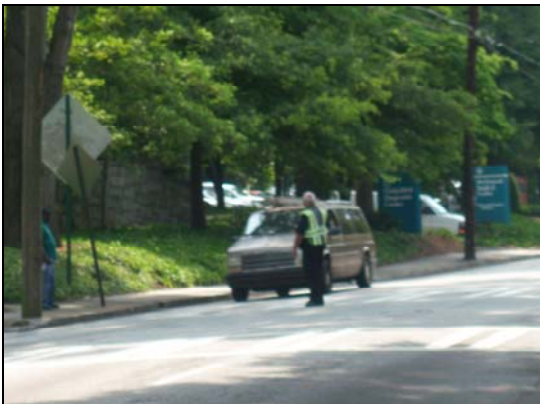
Ending Intersection: Anjaco Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 3		<b>Date:</b> June 3, 2008 <b>Time:</b> 12:10 PM		<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s							
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>											
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>											
<b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>											
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>											
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>											
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>											
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>											
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>											
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input checked="" type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input checked="" type="checkbox"/> None <input type="checkbox"/>											
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>											
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>											
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>											
<b>If no sidewalk, skip now to Section C.</b>											
<b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>											
<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>											
<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>6</u>											
<b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>											
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>											
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>											
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>											
<b>18. Off-street parking lot spaces</b> <table border="1"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>						0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+									
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>											
<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>											
<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input checked="" type="checkbox"/>											
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>											
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>											
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>											
<b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>											
<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>											
<b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>											
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>											
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>											
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>											
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>											
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>											
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>											
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>											
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>											
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree											
... is attractive for walking. <u>2</u>											
... is attractive for cycling. <u>4</u>											
... feels safe for walking. <u>2</u>											
... feels safe for cycling. <u>4</u>											

## Segment 4: Collier Road NW

**Beginning Intersection:** Anjaco Road NW

**Ending Intersection:** Ardmore Road NW



## Segment 4: Collier Road NW

Beginning Intersection: Anjaco Road NW

Ending Intersection: Ardmore Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 4	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:40 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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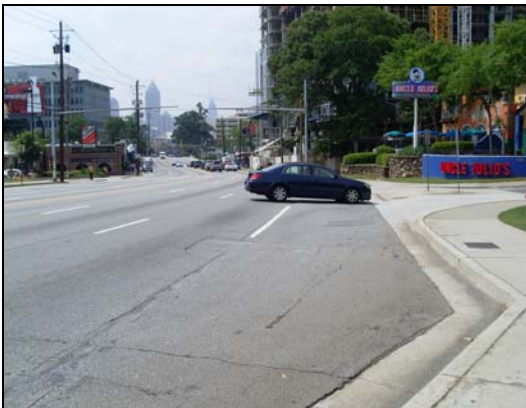
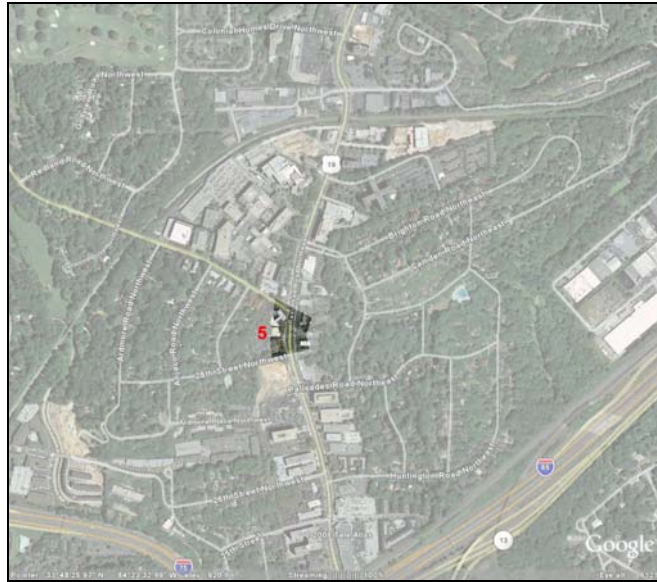
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>6</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>B. PEDESTRIAN FACILITY (skip if none present)</b>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>	<b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>30</u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>						
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input checked="" type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>4</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>4</u>								



## Segment 5: Peachtree Road NW (West Side)

**Beginning Intersection:** 28th Street NW

**Ending Intersection:** Collier Road NW



## Segment 5: Peachtree Road NW (West Side)

Beginning Intersection: 28th Street NW

Ending Intersection: Collier Road NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 5	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:30 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/> <b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input checked="" type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input type="checkbox"/>								
<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>4</u> <b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/> <b>Subjective Assessment: Segment...</b> <i>1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree</i> ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								



## Segment 6: Wycliff Road NW

**Beginning Intersection:** 28th Street NW

**Ending Intersection:** Collier Road NW



## Segment 6: Wycliff Road NW

Beginning Intersection: 28th Street NW

Ending Intersection: Collier Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 6	<b>Date:</b> June 3, 2008 <b>Time:</b> 12:00 PM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>25</u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input checked="" type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>						
	<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>1</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>1</u>								

## Segment 7: Anjaco Road NW

**Beginning Intersection:** 28th Street NW

**Ending Intersection:** Collier Road NW



## Segment 7: Anjaco Road NW

Beginning Intersection: 28th Street NW

Ending Intersection: Collier Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 7	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:56 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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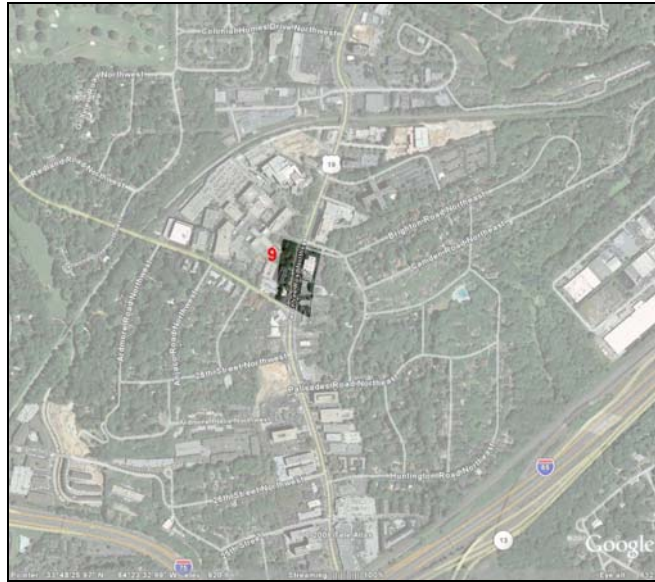
<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>25</u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input checked="" type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>						
	<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>1</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>1</u>								



## Segment 9: Peachtree Road NE (West Side)

**Beginning Intersection:** Collier Road NW

**Ending Intersection:** Brighton Road NE





## Segment 9: Peachtree Road NE (West Side)

Beginning Intersection: Collier Road NW

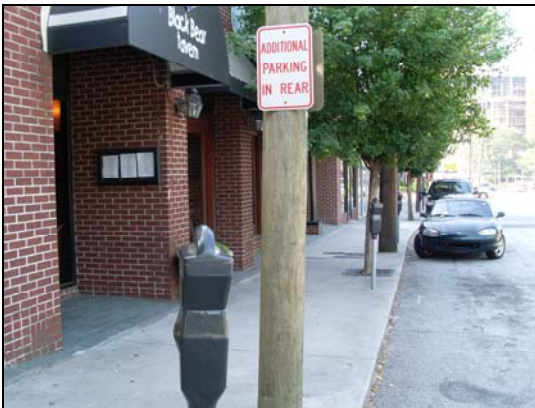
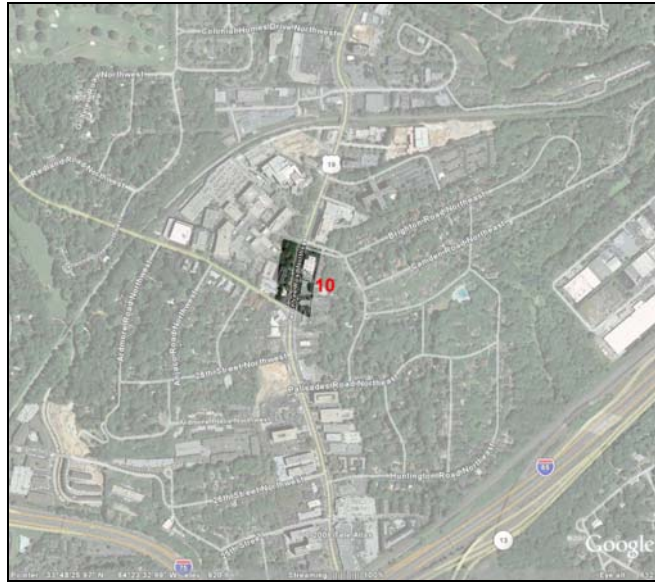
Ending Intersection: Brighton Road NE

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 9	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:21 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <p style="text-align: center; font-size: small;">The remaining questions in Section B refer to the best pedestrian facility selected above.</p> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input checked="" type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u> <b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">0-5</td> <td style="padding: 2px;">6-25</td> <td style="padding: 2px;">26+</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input checked="" type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input checked="" type="checkbox"/> Good (no litter/graffiti/broken facilities) <input type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>3</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								

## Segment 10: Peachtree Road NE (East Side)

**Beginning Intersection:** Collier Road NW

**Ending Intersection:** Brighton Road NE



## Segment 10: Peachtree Road NE (East Side)

Beginning Intersection: Collier Road NW

Ending Intersection: Brighton Road NE

Name: Amy, Michelle, and Myungje		Date: June 3, 2008	Study Area: Piedmont Hospital HIA
Segment: Group 1 - Segment 10		Time: 9:45 AM	Weather: Sunny, High 80s

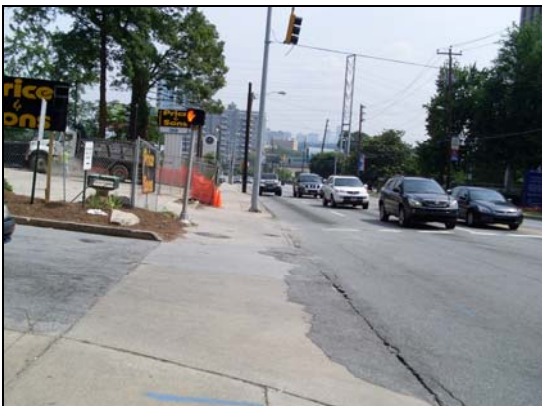
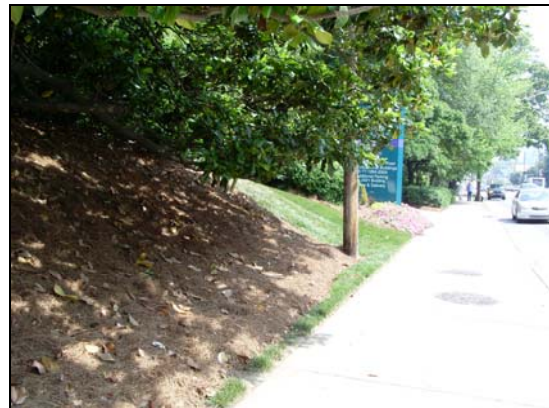
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>		<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>		<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>							
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>		<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>		<b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input checked="" type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>							
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>		<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>5</u>		<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>							
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>		<b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>		<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>							
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>		<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>4</u>		<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>							
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>		<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <input type="text"/>		<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>							
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>		<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/>		<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>							
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>		<b>18. Off-street parking lot spaces</b> <table border="1"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>		0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>	
0-5	6-25	26+									
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscaping <input type="checkbox"/> Grass <input type="checkbox"/> None <input type="checkbox"/>		<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>							
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>		<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>		<b>33. Building setbacks from street</b> At edge of sidewalk <input checked="" type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input type="checkbox"/>							
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>		<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>		<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>							
		<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>		<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input checked="" type="checkbox"/> No bus stop <input type="checkbox"/>							
		<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>		<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>							



## Segment 11: Peachtree Road NE (West Side)

**Beginning Intersection:** Brighton Road NE

**Ending Intersection:** Peachtree Valley Road NE



## Segment 11: Peachtree Road NE (West Side)

**Beginning Intersection:** Brighton Road NE

**Ending Intersection:** Peachtree Valley Road NE

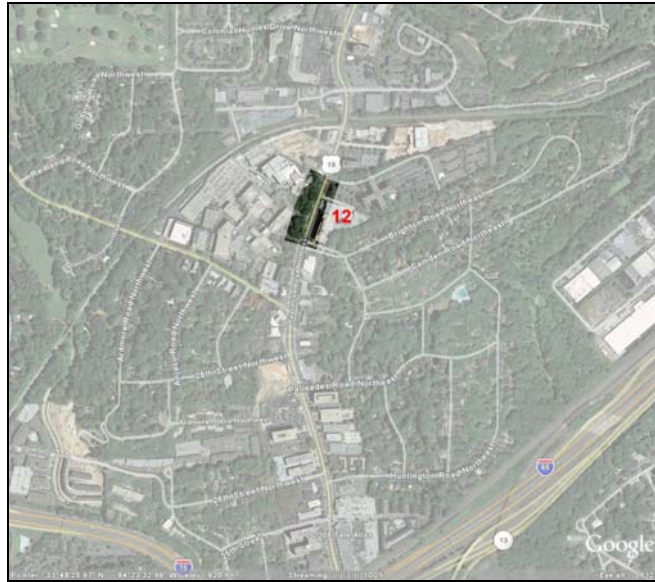
<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 11	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:03 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/> <b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <p style="text-align: center; font-size: small;">The remaining questions in Section B refer to the best pedestrian facility selected above.</p> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>5</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u> <b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>35</u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">0-5</td> <td style="padding: 2px;">6-25</td> <td style="padding: 2px;">26+</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input checked="" type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/> <b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								



## Segment 12: Peachtree Road NE (East Side)

**Beginning Intersection:** Brighton Road NE

**Ending Intersection:** Peachtree Valley Road NE



## Segment 12: Peachtree Road NE (East Side)

Beginning Intersection: Brighton Road NE

Ending Intersection: Peachtree Valley Road NE

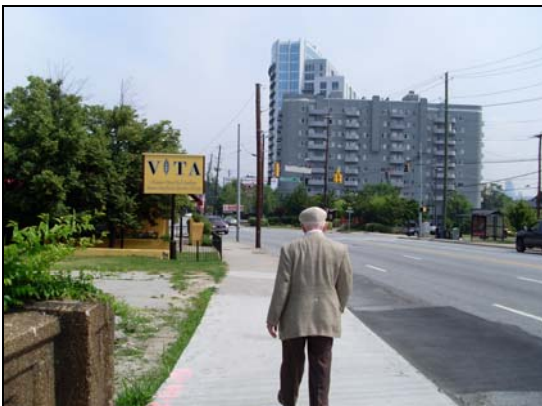
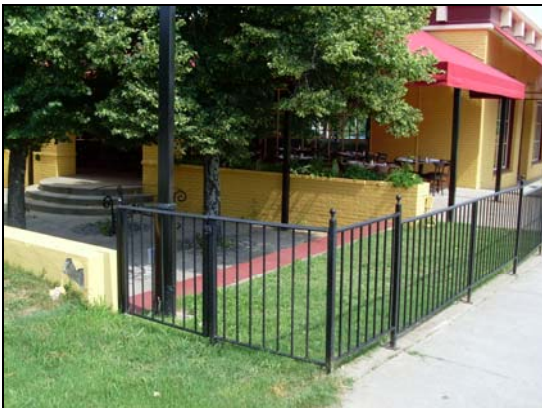
<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 12	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:01 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>								
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>								
<b>3. Segment intersections</b> Segment has 3-way intersection <input type="checkbox"/> Segment has 4-way intersection <input checked="" type="checkbox"/> Segment has other intersection <input type="checkbox"/> Segment dead ends but path continues <input type="checkbox"/> Segment dead ends <input type="checkbox"/> Segment has no intersections <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>								
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>								
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>								
<i>If no sidewalk, skip now to Section C.</i>								
<b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>								
<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete <input checked="" type="checkbox"/> Sidewalk is incomplete <input type="checkbox"/>								
<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <input type="text" value="6"/>								
<b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <input type="text" value="3"/> Maximum # of lanes to cross <input type="text" value="4"/>								
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <input type="text"/>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input checked="" type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>								
<b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input checked="" type="checkbox"/> Good (no litter/graffiti/broken facilities) <input type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input checked="" type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <input type="text" value="1"/> ... is attractive for cycling. <input type="text" value="2"/> ... feels safe for walking. <input type="text" value="2"/> ... feels safe for cycling. <input type="text" value="3"/>								



## Segment 13: Peachtree Road NE (West Side)

**Beginning Intersection:** Peachtree Valley Road NE

**Ending Intersection:** Bennett Street NW



## Segment 13: Peachtree Road NE (West Side)

**Beginning Intersection:** Peachtree Valley Road NE

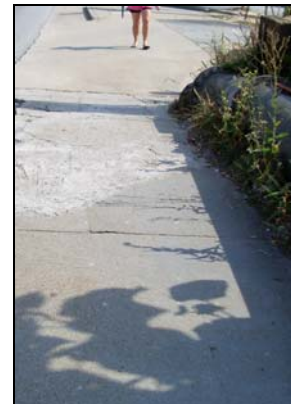
**Ending Intersection:** Bennett Street NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 13	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:58 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/> <b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <p style="text-align: center; font-size: small;">The remaining questions in Section B refer to the best pedestrian facility selected above.</p> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> < 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u> <b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black;">0-5</td> <td style="border: 1px solid black;">6-25</td> <td style="border: 1px solid black;">26+</td> </tr> <tr> <td style="border: 1px solid black;"><input type="checkbox"/></td> <td style="border: 1px solid black;"><input type="checkbox"/></td> <td style="border: 1px solid black;"><input checked="" type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/> <b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>3</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>3</u> ... feels safe for cycling. <u>3</u>								

## Segment 14: Peachtree Road NE (East Side)

**Beginning Intersection:** Peachtree Valley Road NE

**Ending Intersection:** Bennett Street NW





## Segment 14: Peachtree Road NE (East Side)

**Beginning Intersection:** Peachtree Valley Road NE

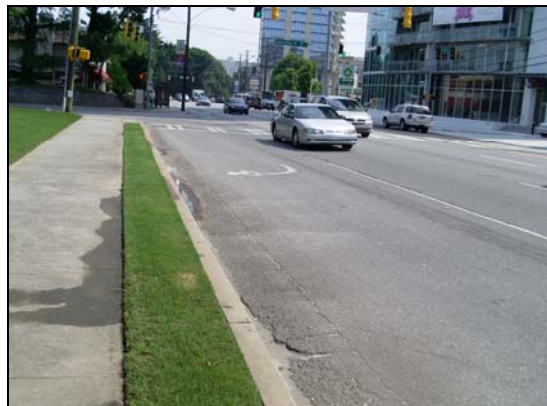
**Ending Intersection:** Bennett Street NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 14	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:13 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <p style="text-align: center; font-size: small;">The remaining questions in Section B refer to the best pedestrian facility selected above.</p> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> < 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u> <b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): _____ <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">0-5</td> <td style="padding: 2px;">6-25</td> <td style="padding: 2px;">26+</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input checked="" type="checkbox"/> Good (no litter/graffiti/broken facilities) <input type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>3</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>3</u> ... feels safe for cycling. <u>3</u>								

## Segment 15: Peachtree Road NE (West Side)

**Beginning Intersection:** Bennett Street NW

**Ending Intersection:** Colonial Homes Drive NW



## Segment 15: Peachtree Road NE (West Side)

**Beginning Intersection:** Bennett Street NW

**Ending Intersection:** Colonial Homes Drive NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 15	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:50 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>B. PEDESTRIAN FACILITY (skip if none present)</b>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>						
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>5</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>      </u>	<b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>						
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input checked="" type="checkbox"/> > 5 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								



## Segment 16: Peachtree Road NE (East Side)

**Beginning Intersection:** Bennett Street NW

**Ending Intersection:** Colonial Homes Drive NW



## Segment 16: Peachtree Road NE (East Side)

**Beginning Intersection:** Bennett Street NW

**Ending Intersection:** Colonial Homes Drive NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 16	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:26 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>B. PEDESTRIAN FACILITY (skip if none present)</b>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>      </u>	<b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>						
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input checked="" type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>3</u> ... feels safe for cycling. <u>3</u>								



## Segment 17: Dellwood Drive NW

**Beginning Intersection:** Golf View

**Ending Intersection:** Redland Road NW



## Segment 17: Dellwood Drive NW

Beginning Intersection: Golf View

Ending Intersection: Redland Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 17	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:00 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input checked="" type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <p style="text-align: center; font-size: small;">The remaining questions in Section B refer to the best pedestrian facility selected above.</p> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b> <b>11. Curb cuts</b> None <input checked="" type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u> <b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>25</u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/> <b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>2</u>								

## Segment 18: Dellwood Drive NW

**Beginning Intersection:** Redland Road NW

**Ending Intersection:** Collier Road NW



## Segment 18: Dellwood Drive NW

**Beginning Intersection:** Redland Road NW

**Ending Intersection:** Collier Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 18	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:15 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input checked="" type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>2</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>      </u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="margin: 0 auto;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>						
	<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>2</u>								



## Segment 19: Collier Road NW

**Beginning Intersection:** Ardmore Road NW

**Ending Intersection:** Dellwood Drive NW





## Segment 19: Collier Road NW

Beginning Intersection: Ardmore Road NW

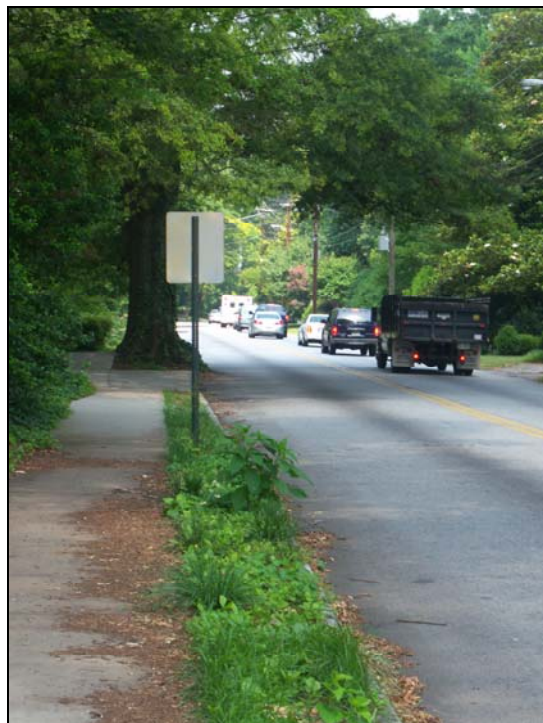
Ending Intersection: Dellwood Drive NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 20	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:25 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s								
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>										
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>  <b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>  <b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>										
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>  <i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>  <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>  <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>  <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>  <b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input checked="" type="checkbox"/> > 5 feet <input type="checkbox"/>  <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>										
<b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>  <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>  <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u>  <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>  <b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>  <b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>30</u>  <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>  <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>  <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>  <b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input checked="" type="checkbox"/>  <b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>  <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>			0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0-5	6-25	26+								
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>  <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>  <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>  <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>  <b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>  <b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>  <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/>  <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>  <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>  <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>  <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>  <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>										
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree <table style="width: 100%;"> <tr> <td>... is attractive for walking.</td> <td style="text-align: right;"><u>2</u></td> </tr> <tr> <td>... is attractive for cycling.</td> <td style="text-align: right;"><u>4</u></td> </tr> <tr> <td>... feels safe for walking.</td> <td style="text-align: right;"><u>2</u></td> </tr> <tr> <td>... feels safe for cycling.</td> <td style="text-align: right;"><u>4</u></td> </tr> </table>			... is attractive for walking.	<u>2</u>	... is attractive for cycling.	<u>4</u>	... feels safe for walking.	<u>2</u>	... feels safe for cycling.	<u>4</u>
... is attractive for walking.	<u>2</u>									
... is attractive for cycling.	<u>4</u>									
... feels safe for walking.	<u>2</u>									
... feels safe for cycling.	<u>4</u>									

## Segment 20: Collier Road NW

**Beginning Intersection:** Dellwood Drive NW

**Ending Intersection:** Redland Road NW



## Segment 20: Collier Road NW

Beginning Intersection: Dellwood Drive NW

Ending Intersection: Redland Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 20	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:25 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>								
<b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>30</u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>4</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>4</u>								

## Segment 21: Ardmore Road NW

**Beginning Intersection:** 28<sup>th</sup> Street NW

**Ending Intersection:** Collier Road NW



## Segment 21: Ardmore Road NW

Beginning Intersection: 28<sup>th</sup> Street NW

Ending Intersection: Collier Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 21	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:27 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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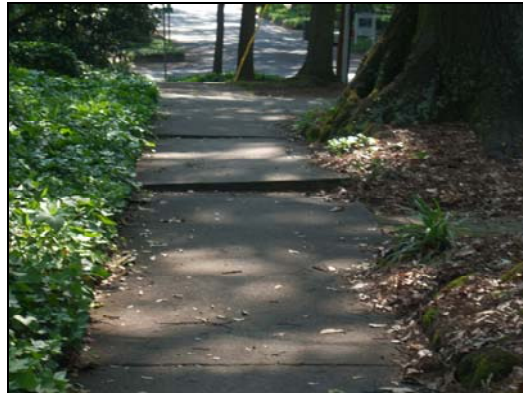
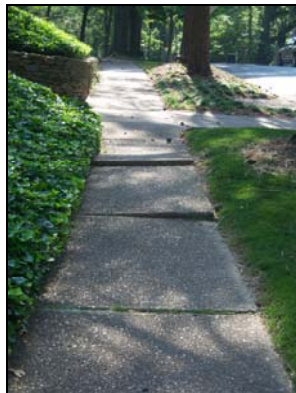
<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input checked="" type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections _____ <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u> <b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>25</u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>  <i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input type="checkbox"/> <b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input checked="" type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>Subjective Assessment: Segment...</b> <i>1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree</i> ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>2</u>						



## Segment 22: 28<sup>th</sup> Street NW

**Beginning Intersection:** Ardmore Road NW

**Ending Intersection:** Anjaco Road NW



## Segment 22: 28<sup>th</sup> Street NW

Beginning Intersection: Ardmore Road NW

Ending Intersection: Anjaco Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 22	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:15 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>								
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>2</u>								

## Segment 23: 28<sup>th</sup> Street NW

**Beginning Intersection:** Anjaco Road NW

**Ending Intersection:** Wycliff Road NW



## Segment 23: 28<sup>th</sup> Street NW

Beginning Intersection: Anjaco Road NW

Ending Intersection: Wycliff Road NW

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 23	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:05 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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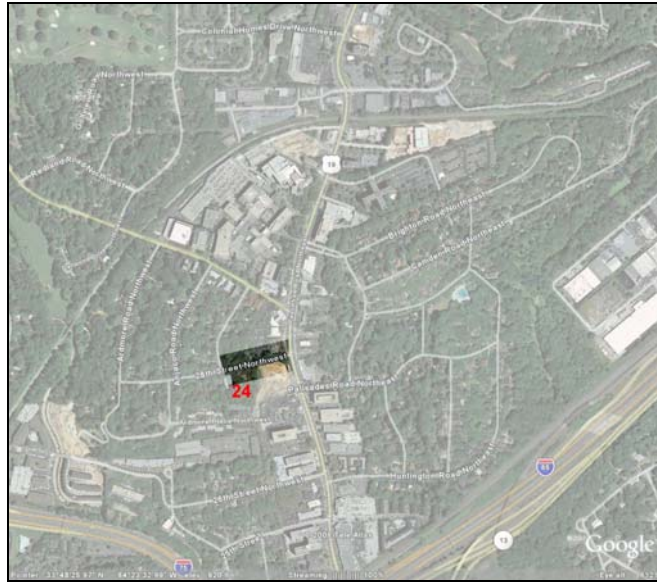
<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input checked="" type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>      </u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="margin: 0 auto;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input checked="" type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>						
	<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>2</u>								



## Segment 24: 28<sup>th</sup> Street NW

**Beginning Intersection:** Wycliff Road NW

**Ending Intersection:** Peachtree Road NE





## Segment 24: 28<sup>th</sup> Street NW

**Beginning Intersection:** Wycliff Road NW

**Ending Intersection:** Peachtree Road NE

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 24	<b>Date:</b> June 3, 2008 <b>Time:</b> 9:50 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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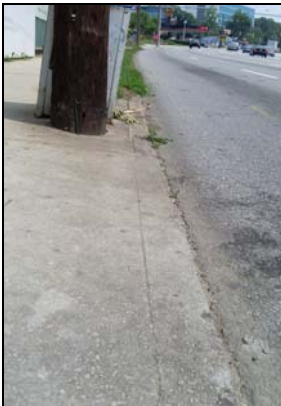
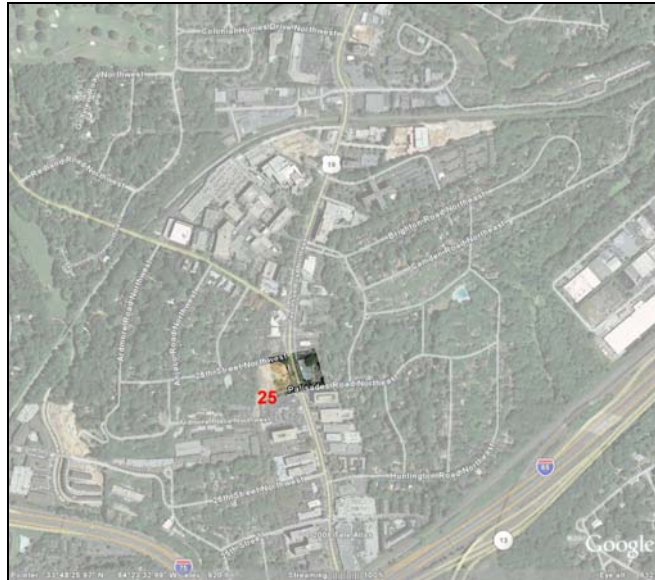
  

<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input checked="" type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input checked="" type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>B. PEDESTRIAN FACILITY (skip if none present)</b>	<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>						
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>	<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>						
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>      </u>	<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>						
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input checked="" type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>	<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>						
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>						
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input checked="" type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>						
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>	<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>	<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>						
	<b>22. Crosswalks</b> None <input checked="" type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>	<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>						
	<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input checked="" type="checkbox"/>	<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>						
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>2</u>								

## Segment 25: Peachtree Road NE (West Side)

**Beginning Intersection:** Palisades Road NE

**Ending Intersection:** 28<sup>th</sup> Street NW



## Segment 25: Peachtree Road NE (West Side)

Beginning Intersection: Palisades Road NE

Ending Intersection: 28<sup>th</sup> Street NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 25	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:36 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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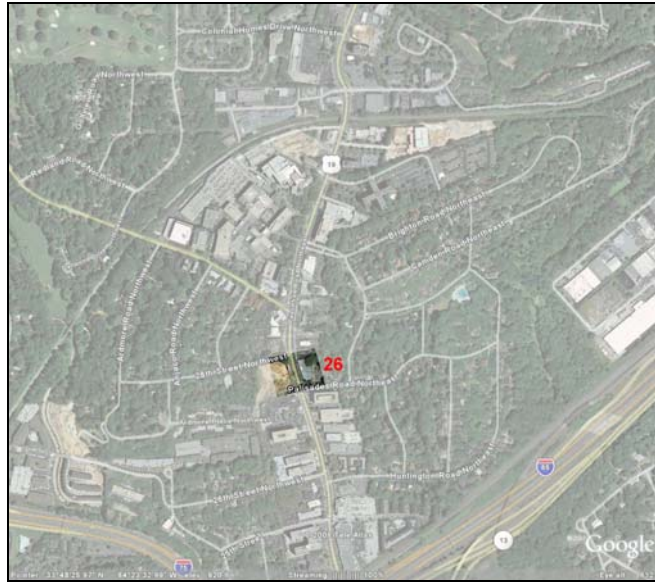
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>	<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>							
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black;">0-5</td> <td style="border: 1px solid black;">6-25</td> <td style="border: 1px solid black;">26+</td> </tr> <tr> <td style="border: 1px solid black;"><input type="checkbox"/></td> <td style="border: 1px solid black;"><input type="checkbox"/></td> <td style="border: 1px solid black;"><input checked="" type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input checked="" type="checkbox"/> Good (no litter/graffiti/broken facilities) <input type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>3</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								



## Segment 26: Peachtree Road NE (East Side)

**Beginning Intersection:** Palisades Road NE

**Ending Intersection:** 28<sup>th</sup> Street NW



## Segment 26: Peachtree Road NE (East Side)

Beginning Intersection: Palisades Road NE

Ending Intersection: 28<sup>th</sup> Street NW

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 26	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:59 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>								
<b>A. ENVIRONMENT</b>										
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>								
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>								
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>									
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>										
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>4</u>										
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>										
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>										
<b>18. Off-street parking lot spaces</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">0-5</td> <td style="width: 33%;">6-25</td> <td style="width: 33%;">26+</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0-5	6-25	26+								
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>										
<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>										
<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>										
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>										
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>										
<b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/>										
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>										
<b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>										
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input checked="" type="checkbox"/>										
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/>										
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>										
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input checked="" type="checkbox"/>										
<b>33. Building setbacks from street</b> At edge of sidewalk <input checked="" type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input type="checkbox"/>										
<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>										
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>										
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree <table style="width: 100%;"> <tr> <td>... is attractive for walking.</td> <td style="text-align: right;"><u>1</u></td> </tr> <tr> <td>... is attractive for cycling.</td> <td style="text-align: right;"><u>2</u></td> </tr> <tr> <td>... feels safe for walking.</td> <td style="text-align: right;"><u>2</u></td> </tr> <tr> <td>... feels safe for cycling.</td> <td style="text-align: right;"><u>3</u></td> </tr> </table>			... is attractive for walking.	<u>1</u>	... is attractive for cycling.	<u>2</u>	... feels safe for walking.	<u>2</u>	... feels safe for cycling.	<u>3</u>
... is attractive for walking.	<u>1</u>									
... is attractive for cycling.	<u>2</u>									
... feels safe for walking.	<u>2</u>									
... feels safe for cycling.	<u>3</u>									

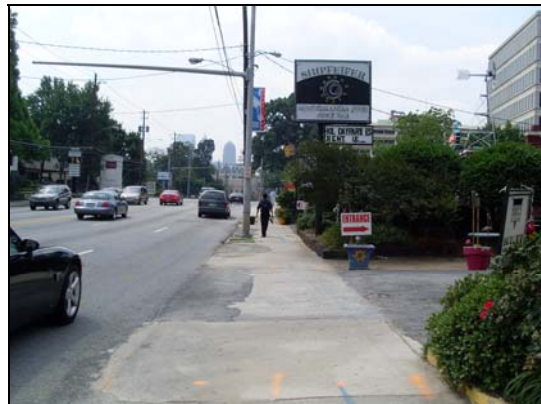
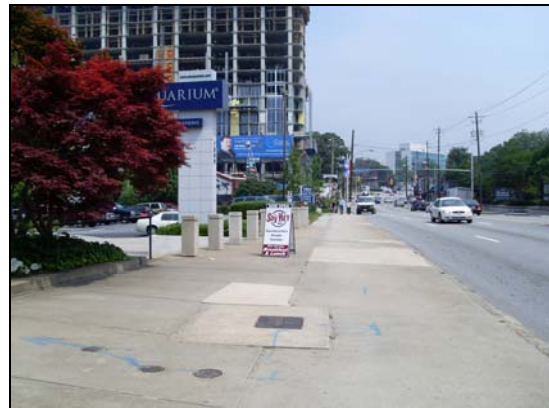
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>		
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>		
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input type="checkbox"/> None <input checked="" type="checkbox"/>		
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>		
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input checked="" type="checkbox"/>		



## Segment 27: Peachtree Road NE (West Side)

**Beginning Intersection:** 26<sup>th</sup> Street NW

**Ending Intersection:** Palisades Road NE



## Segment 27: Peachtree Road NE (West Side)

Beginning Intersection: 26<sup>th</sup> Street NW

Ending Intersection: Palisades Road NE

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 27	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:41 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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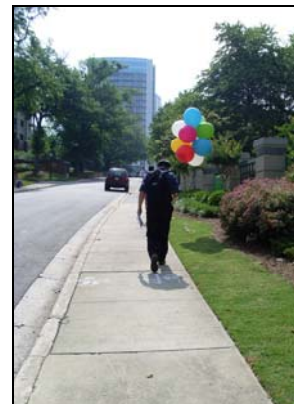
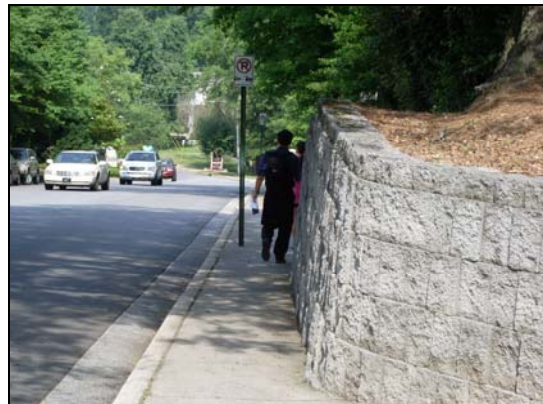
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>								
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 33%;">0-5</td> <td style="border: 1px solid black; width: 33%;">6-25</td> <td style="border: 1px solid black; width: 33%;">26+</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input checked="" type="checkbox"/> More than 20 feet from sidewalk <input type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>2</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								



## Segment 28: Colonial Homes Drive NW

**Beginning Intersection:** Peachtree Road NE

**Ending Intersection:** S. Colonial Homes Circle



## Segment 28: Colonial Homes Drive NW

Beginning Intersection: Peachtree Road NE

Ending Intersection: S. Colonial Homes Circle

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 28	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:34 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input checked="" type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/> <b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input checked="" type="checkbox"/> <b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input checked="" type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/> <p style="text-align: center; font-size: small;">The remaining questions in Section B refer to the best pedestrian facility selected above.</p> <b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/> <b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> <b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/> <b>10. Sidewalk width</b> < 4 feet <input checked="" type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input type="checkbox"/>								
<b>If no sidewalk, skip now to Section C.</b> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/> <b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/> <b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>2</u> <b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/> <b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>4</u> <b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u> <b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input checked="" type="checkbox"/> None <input type="checkbox"/> <b>18. Off-street parking lot spaces</b> <table style="width: 100%; text-align: center;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> <b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/> <b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/> <b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input checked="" type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/> <b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/> <b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input checked="" type="checkbox"/> <b>26. Amenities (all that apply)</b> Public Garbage cans <input type="checkbox"/> Benches <input type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input checked="" type="checkbox"/> <b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/> <b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/> <b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input checked="" type="checkbox"/> <b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/> <b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/> <b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/> <b>34. Building height</b> Short (1 to 3 stories) <input checked="" type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input checked="" type="checkbox"/> <b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>1</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>1</u>								

## Segment 29: Peachtree Road NE (East Side)

**Beginning Intersection:** 26<sup>th</sup> Street NW

**Ending Intersection:** Palisades Road NE





## Segment 29: Peachtree Road NE (East Side)

Beginning Intersection: 26<sup>th</sup> Street NW

Ending Intersection: Palisades Road NE

<b>Name:</b> Amy, Michelle, and Myungje <b>Segment:</b> Group 1- Segment 29	<b>Date:</b> June 3, 2008 <b>Time:</b> 11:49 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s
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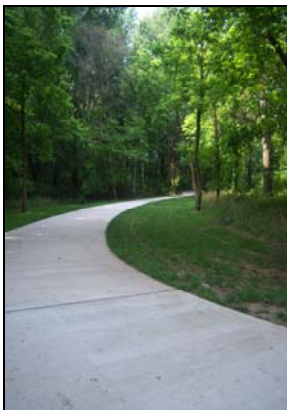
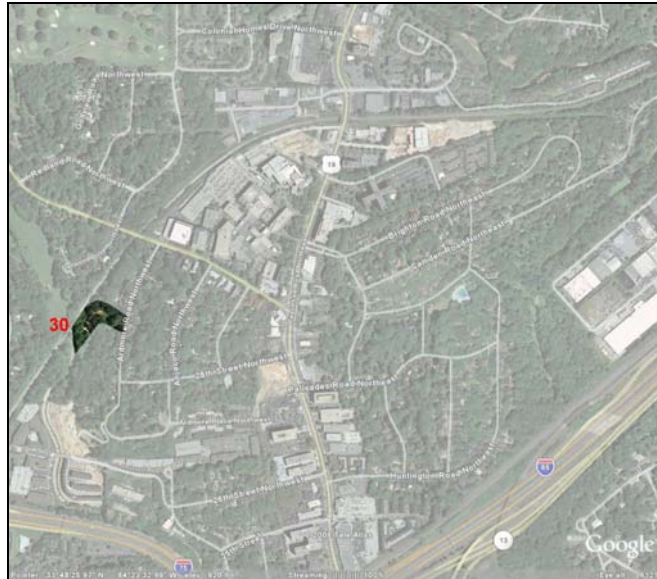
  

<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input checked="" type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>	<i>If no sidewalk, skip now to Section C.</i> <b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>	<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>						
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>	<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>	<b>D. WALKING/CYCLING ENVIRONMENT</b>						
<b>2. Slope</b> Flat <input type="checkbox"/> Slight hill <input checked="" type="checkbox"/> Steep hill <input type="checkbox"/>	<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>3</u>	<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>						
<b>3. Segment intersections</b> Segment has 3-way intersection. <input checked="" type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>	<b>C. ROAD ATTRIBUTES (skip if path only)</b>							
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>3</u> Maximum # of lanes to cross <u>3</u>								
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black;">0-5</td> <td style="border: 1px solid black;">6-25</td> <td style="border: 1px solid black;">26+</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black; text-align: center;">X</td> </tr> </table>			0-5	6-25	26+			X
0-5	6-25	26+						
		X						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input checked="" type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input checked="" type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input checked="" type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input checked="" type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input checked="" type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input checked="" type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input checked="" type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input type="checkbox"/> Some articulation <input checked="" type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input checked="" type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>3</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>3</u>								

<b>B. PEDESTRIAN FACILITY (skip if none present)</b>	<b>11. Curb cuts</b>	<b>24. Bicycle facilities</b>
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>	<b>14. Condition of road</b>	<b>D. WALKING/CYCLING ENVIRONMENT</b>
The remaining questions in Section B refer to the best pedestrian facility selected above.		
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>	<b>15. Number of lanes</b>	<b>25. Roadway/path lighting</b>
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>	<b>16. Posted speed limit</b>	<b>26. Amenities</b>
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>17. On-Street Parking</b>	<b>27. Are there wayfinding aids?</b>
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>	<b>18. Off-street parking lot spaces</b>	<b>28. Number of trees shading area</b>
<b>9. Path distance from curb</b> At edge <input checked="" type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input type="checkbox"/>	<b>19. Must you walk through a parking lot to get to most buildings?</b>	<b>29. Degree of enclosure</b>
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input checked="" type="checkbox"/>	<b>20. Presence of med-hi volume driveways</b>	<b>30. Powerlines along segment?</b>
<b>21. Traffic control devices</b>		
<b>22. Crosswalks</b>		
<b>23. Crossing aids</b>		

## Segment 30: Tanyard Creek Park PATH

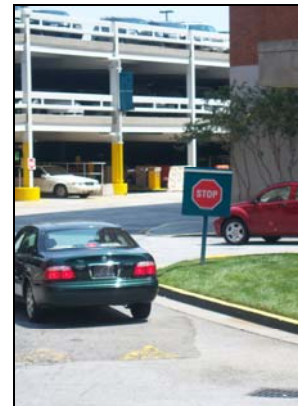


## Segment 30: Tanyard Creek Park PATH

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Segment 30 (Path)	<b>Date:</b> June 3, 2008 <b>Time:</b> 10:35 AM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input checked="" type="checkbox"/>								
<b>A. ENVIRONMENT</b> <b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input checked="" type="checkbox"/>								
<b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>								
<b>3. Segment intersections</b> Segment has 3-way intersection. <input type="checkbox"/> Segment has 4-way intersection. <input type="checkbox"/> Segment has other intersection. <input type="checkbox"/> Segment dead ends but path continues. <input type="checkbox"/> Segment dead ends. <input type="checkbox"/> Segment has no intersections. <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b> <b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input checked="" type="checkbox"/> Paved trail <input checked="" type="checkbox"/> Sidewalk <input type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>								
<i>The remaining questions in Section B refer to the best pedestrian facility selected above.</i>								
<b>5. Path material (all that apply)</b> Asphalt <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>								
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input checked="" type="checkbox"/>								
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input type="checkbox"/> > 8 feet <input checked="" type="checkbox"/>								
<b>C. ROAD ATTRIBUTES (skip if path only)</b> <b>11. Curb cuts</b> None <input checked="" type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete. <input checked="" type="checkbox"/> Sidewalk is incomplete. <input type="checkbox"/>								
<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>4</u>								
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>        </u> Maximum # of lanes to cross <u>        </u>								
<b>16. Posted speed limit</b> None posted <input type="checkbox"/> (mph): <u>        </u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>0-5</td> <td>6-25</td> <td>26+</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>24. Bicycle facilities (all that apply)</b> Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input type="checkbox"/>								
<b>D. WALKING/CYCLING ENVIRONMENT</b> <b>25. Roadway/path lighting</b> Road-oriented lighting <input type="checkbox"/> Pedestrian-oriented lighting <input checked="" type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input type="checkbox"/> Many/Dense <input checked="" type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input checked="" type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input checked="" type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input checked="" type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree ... is attractive for walking. <u>1</u> ... is attractive for cycling. <u>1</u> ... feels safe for walking. <u>1</u> ... feels safe for cycling. <u>1</u>								



## Segment PH: Piedmont Hospital Campus



## Segment PH: Piedmont Hospital Campus

<b>Name:</b> Jason, Joe, and Molly <b>Segment:</b> Group 2- Piedmont Hospital	<b>Date:</b> June 3, 2008 <b>Time:</b> 12:20 PM	<b>Study Area:</b> Piedmont Hospital HIA <b>Weather:</b> Sunny, High 80s						
<b>0. Segment type</b> Low volume road <input checked="" type="checkbox"/> High volume road <input type="checkbox"/> Bike or Ped Path - skip section C. <input type="checkbox"/>								
<b>A. ENVIRONMENT</b>								
<b>1. Uses in segment (all that apply)</b> Housing- Single Family Detached <input type="checkbox"/> Housing- Multi-Family <input type="checkbox"/> Housing- Mobile Homes <input type="checkbox"/> Office/Institutional <input checked="" type="checkbox"/> Restaurant/Café/Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Vacant/Undeveloped <input type="checkbox"/> Recreation <input type="checkbox"/>								
<b>2. Slope</b> Flat <input checked="" type="checkbox"/> Slight hill <input type="checkbox"/> Steep hill <input type="checkbox"/>								
<b>3. Segment intersections</b> Segment has 3-way intersection <input checked="" type="checkbox"/> Segment has 4-way intersection <input type="checkbox"/> Segment has other intersection <input type="checkbox"/> Segment dead ends but path continues <input type="checkbox"/> Segment dead ends <input type="checkbox"/> Segment has no intersections <input type="checkbox"/>								
<b>B. PEDESTRIAN FACILITY (skip if none present)</b>								
<b>4. Type facility (all that apply)</b> Footpath (worn dirt path) <input type="checkbox"/> Paved trail <input type="checkbox"/> Sidewalk <input checked="" type="checkbox"/> Pedestrian Street (closed to cars) <input type="checkbox"/>								
The remaining questions in Section B refer to the best pedestrian facility selected above.								
<b>5. Path material (all that apply)</b> Asphalt <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Paving Bricks or Flat Stone <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt or Sand <input type="checkbox"/>								
<b>6. Path condition/maintenance</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>7. Path obstructions (all that apply)</b> Poles or Signs <input type="checkbox"/> Parked Cars <input type="checkbox"/> Greenery <input type="checkbox"/> Garbage Cans <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>8. Buffers between road and path (all that apply)</b> Fence <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Hedges <input type="checkbox"/> Landscape <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> None <input type="checkbox"/>								
<b>9. Path distance from curb</b> At edge <input type="checkbox"/> < 5 feet <input type="checkbox"/> > 5 feet <input checked="" type="checkbox"/>								
<b>10. Sidewalk width</b> < 4 feet <input type="checkbox"/> Between 4 and 8 feet <input checked="" type="checkbox"/> > 8 feet <input type="checkbox"/>								
<b>C. ROAD ATTRIBUTES (skip if path only)</b>								
<b>11. Curb cuts</b> None <input type="checkbox"/> 1 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>								
<b>12. Sidewalk completeness/continuity</b> Sidewalk is complete <input checked="" type="checkbox"/> Sidewalk is incomplete <input type="checkbox"/>								
<b>13. Sidewalk connectivity to other sidewalks/crosswalks</b> Number of connections <u>2</u>								
<b>14. Condition of road</b> Poor (many bumps/cracks/holes) <input type="checkbox"/> Fair (some bumps/cracks/holes) <input type="checkbox"/> Good (very few bumps/cracks/holes) <input checked="" type="checkbox"/> Under Repair <input type="checkbox"/>								
<b>15. Number of lanes</b> Minimum # of lanes to cross <u>2</u> Maximum # of lanes to cross <u>2</u>								
<b>16. Posted speed limit</b> None posted <input checked="" type="checkbox"/> (mph): <u>          </u>								
<b>17. On-Street Parking (if pavement is unmarked, check only if cars parked)</b> Parallel or diagonal <input type="checkbox"/> None <input checked="" type="checkbox"/>								
<b>18. Off-street parking lot spaces</b> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">0-5</td> <td style="padding: 2px;">6-25</td> <td style="padding: 2px;">26+</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>			0-5	6-25	26+	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0-5	6-25	26+						
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>19. Must you walk through a parking lot to get to most buildings?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
<b>20. Presence of med-hi volume driveways</b> < 2 <input type="checkbox"/> 2 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>								
<b>21. Traffic control devices (all that apply)</b> Traffic light <input type="checkbox"/> Stop sign <input checked="" type="checkbox"/> Traffic circle <input type="checkbox"/> Speed bumps <input checked="" type="checkbox"/> Chicanes or chokers <input type="checkbox"/> None <input type="checkbox"/>								
<b>22. Crosswalks</b> None <input type="checkbox"/> 1 to 2 <input type="checkbox"/> 3 to 4 <input type="checkbox"/> > 4 <input checked="" type="checkbox"/>								
<b>23. Crossing aids (all that apply)</b> Yield to Ped Paddles <input type="checkbox"/> Pedestrian signal <input checked="" type="checkbox"/> Median/Traffic Island <input type="checkbox"/> Curb extension <input type="checkbox"/> Overpass/Underpass <input type="checkbox"/> Pedestrian Crossing Warning Sign <input checked="" type="checkbox"/> Flashing Warning Light <input type="checkbox"/> Share the Road Warning Sign <input type="checkbox"/> None <input type="checkbox"/>								
<b>D. BICYCLE FACILITIES (all that apply)</b>								
Bicycle route signs <input type="checkbox"/> Striped bicycle lane designation <input type="checkbox"/> Visible bicycle parking facilities <input type="checkbox"/> Bicycle crossing warning <input type="checkbox"/> No bicycle facilities <input checked="" type="checkbox"/>								
<b>D. WALKING/CYCLING ENVIRONMENT</b>								
<b>25. Roadway/path lighting</b> Road-oriented lighting <input checked="" type="checkbox"/> Pedestrian-oriented lighting <input checked="" type="checkbox"/> Other lighting <input type="checkbox"/> No lighting <input type="checkbox"/>								
<b>26. Amenities (all that apply)</b> Public Garbage cans <input checked="" type="checkbox"/> Benches <input checked="" type="checkbox"/> Water fountain <input type="checkbox"/> Street vendors/vending machines <input type="checkbox"/> No amenities <input type="checkbox"/>								
<b>27. Are there wayfinding aids?</b> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>								
<b>28. Number of trees shading area</b> None or Very Few <input type="checkbox"/> Some <input checked="" type="checkbox"/> Many/Dense <input type="checkbox"/>								
<b>29. Degree of enclosure</b> Little or no enclosure <input type="checkbox"/> Some enclosure <input type="checkbox"/> Highly enclosed <input checked="" type="checkbox"/>								
<b>30. Powerlines along segment?</b> Low Voltage/Distribution Line <input checked="" type="checkbox"/> High Voltage/Transmission Line <input type="checkbox"/> None <input type="checkbox"/>								
<b>31. Overall cleanliness and maintenance</b> Poor (much litter/graffiti/broken facilities) <input type="checkbox"/> Fair (some litter/graffiti/broken facilities) <input type="checkbox"/> Good (no litter/graffiti/broken facilities) <input checked="" type="checkbox"/>								
<b>32. Articulation in building designs</b> Little or no articulation <input checked="" type="checkbox"/> Some articulation <input type="checkbox"/> Highly articulated <input type="checkbox"/>								
<b>33. Building setbacks from street</b> At edge of sidewalk <input checked="" type="checkbox"/> Within 20 feet of sidewalk <input type="checkbox"/> More than 20 feet from sidewalk <input type="checkbox"/>								
<b>34. Building height</b> Short (1 to 3 stories) <input type="checkbox"/> Medium (4 to 7 stories) <input checked="" type="checkbox"/> Tall (8 + stories) <input type="checkbox"/>								
<b>35. Bus stops</b> Bus stop with shelter <input type="checkbox"/> Bus stop with bench <input type="checkbox"/> Bus stop with signage only <input type="checkbox"/> No bus stop <input checked="" type="checkbox"/>								
<b>Subjective Assessment: Segment...</b> 1=Strongly Agree, 2 = Agree, 3= Disagree, 4=Strongly Disagree								
... is attractive for walking. <u>2</u> ... is attractive for cycling. <u>4</u> ... feels safe for walking. <u>2</u> ... feels safe for cycling. <u>4</u>								



## Appendix A.5 – Universal Design Standards

### Neighborhood Design to Enable Active Lives

Since many older adults cannot perform vigorous physical activities, they typically walk for exercise (Feskanich et al., 2002; Tudor-Locke et al., 2002). In a six-year longitudinal study, older adults who walked a mile at least once a week were significantly less likely to develop functional limitations (Miller, 2000; Feskanich et al., 2002). Walking also improves cardiovascular endurance, balance and flexibility (King et al., 1998). Walking as a form of regular physical activity is also important for older adults with disabilities as a means to maintain their functional abilities and independence (Shephard, 1997; Brach et al., 2003) and to lower the chance of increasing their disability (DiPietro, 1996; Ettinger et al., 1997; Spirduso and Cronin, 2001; Hillsdon et al., 2005).

A study in Seattle found significant relationships between community form and level of activity among seniors (Frank et al., 2003). Environmental features which impact walking include congested paths and trails; litter; blocked curb cuts; narrow sidewalks; poor street furniture placement; lack of signage, seating, ramps or curb cuts; steep inclines; noise; poor lighting; landscaping and weather conditions (Fänge et al., 2002; Kirschbaum et al., 2001; Matthews and Vujakovic, 1995; Meyers et al., 2002; Shumway-Cook et al., 2002; Shumway-Cook et al., 2003).

Children's needs and abilities are also an important consideration in community design. Low levels of physical activity and failure to meet the required activity levels have significant health consequences for children such as obesity, low bone density, and low physical fitness (Trost et al., 2001; Bailey and Martin, 1994). Positive social and emotional health benefits such as higher self esteem, lower anxiety, and lower stress are also associated with physical activity among children. Nearly half of young people aged 12-21 years in the United States are not vigorously active on a regular basis, while 14 percent are totally inactive (Centers for Disease Control and Prevention, 2007; U.S. Department of Health and Human Services, 2000).

A literature review about the influence of the built environment on children's physical activity by Lawson and Davison (2006) suggests that the same factors that affect adults also impact children, including conditions like opportunities for physical activity, accessible facilities and destinations, safety and slower traffic, and appealing physical appearance of the immediate environment. Furthermore, physical activity for children is positively associated with access to local parks, playgrounds, and schools; and availability of sidewalks, crosswalks, traffic lights, and public transportation; and negatively associated with the number of roads to cross, traffic density/speed, and crime (Lawson and Davison, 2006). Time spent outdoors is positively associated with physical activity for children. Physical activity for adolescents is positively associated with opportunities for exercise (Sallis et al., 2000).

Neighborhood design has a greater impact on active travel than on other forms of neighborhood-based exercise (Handy, 2004). Subsequently, designation of crosswalks, traffic signals, pedestrian signage, and other amenities become important for access. Traffic speed is recognized as the key determinant for pedestrian injury risk for children (Jacobsen et al., 2000). Precautions such as traffic calming through speed bumps and controlled speed limits are associated with reduced child injury. Traffic safety improvements in California resulted in a 65 percent increase in walking, and 114 percent increase in biking to school among children (Staunton et al., 2003). Additionally, evidence shows that boys walking to school are more physically active over all than those who are driven (Cooper et al., 2003).

## Applying the Principles of Universal Design

Universal Design emphasizes the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (Mace et al., 1991). Such a design philosophy can enable the Piedmont Hospital area to become as inclusive as possible and to accommodate all people with different age and ability levels by the same design. Seven principles of Universal Design advocate **equitable use**, **flexibility in use**, **simple and intuitive use**, **perceptible information**, **tolerance for error**, **low physical effort**, and **size and space for approach and use** (Center for Universal Design, 1997).

**Equitable use** means that designs need to be useful and marketable to people with different levels of ability. The main goal is to provide one design to accommodate all users. If it is not possible, then equivalent options should be available. It is crucial not to stigmatize individuals with specialized design that segregates or isolates them. For example, built environment components should accommodate the needs of elderly and people with disabilities in such a way that they can have the same access as others, without increased difficulty. Furthermore, accessible entrances at the back of the buildings can be a source of stigmatization and embarrassment. Instead, all buildings should accommodate all users at the main entrances (see FIGURE A.4). In addition, playground features should be designed to be usable by various heights and ability levels so that children and adults whether able bodied or using a wheelchair, can get involved in the children's play (see FIGURE A.5).

**FIGURE A. 4 – Examples of Buildings Illustrating “Visual Character”  
With Special Consideration for ADA Accessible Entrances**



**FIGURE A.5 – Inclusive Playgrounds with Accessible and Reachable Design**



**Flexibility in use** recommends that products, buildings and environments should accommodate a wide range of individual preferences and abilities through various methods of use. Access and use should be possible by both left and right handed users. Products and environments should be compatible with the user's pace to accommodate the use by various ability levels. For example, traffic lights should be timed to give people, especially older adults, children, and people carrying loads or using assistive technology, enough time to cross the streets comfortably and without any hazard. In addition, traffic and pedestrian signals may be designed to provide more information to assist pedestrians and drivers in achieving a safe environment within a shared right-of-way.

Universal design also advocates for products and environments that enable **simple and intuitive use**. This means that places should be simple enough to understand regardless of an individual's experiences, knowledge, language skills, or concentration level. The built environment should be designed to eliminate complexity, organize information based on importance, and be consistent with an individual's expectations and intuition. Putting clear signage at appropriate places for the streets, stops, transit destinations, miles walked or remaining for trails, and maps will be important for all the residents and users of the Piedmont Hospital area.

**Perceptible information** should be provided in diverse modes (e.g., auditory, visual, tactile) to match the skills of different users. For example, signs should use contrasting colors for the information and the background (e.g., white on black) to improve legibility, and signage and maps should have big enough letters and Braille for vision impaired users. Furthermore, travelways should use varying texture and color for pavement of streets, sidewalks, and bike paths to provide navigational guidance to older adults and others with vision loss, as well as provide additional locational information for the general public.

Sidewalks, trails, transit stops, and public pedestrian routes can better serve elderly, people with visual impairments, and people using wheelchairs by adding common types of information that

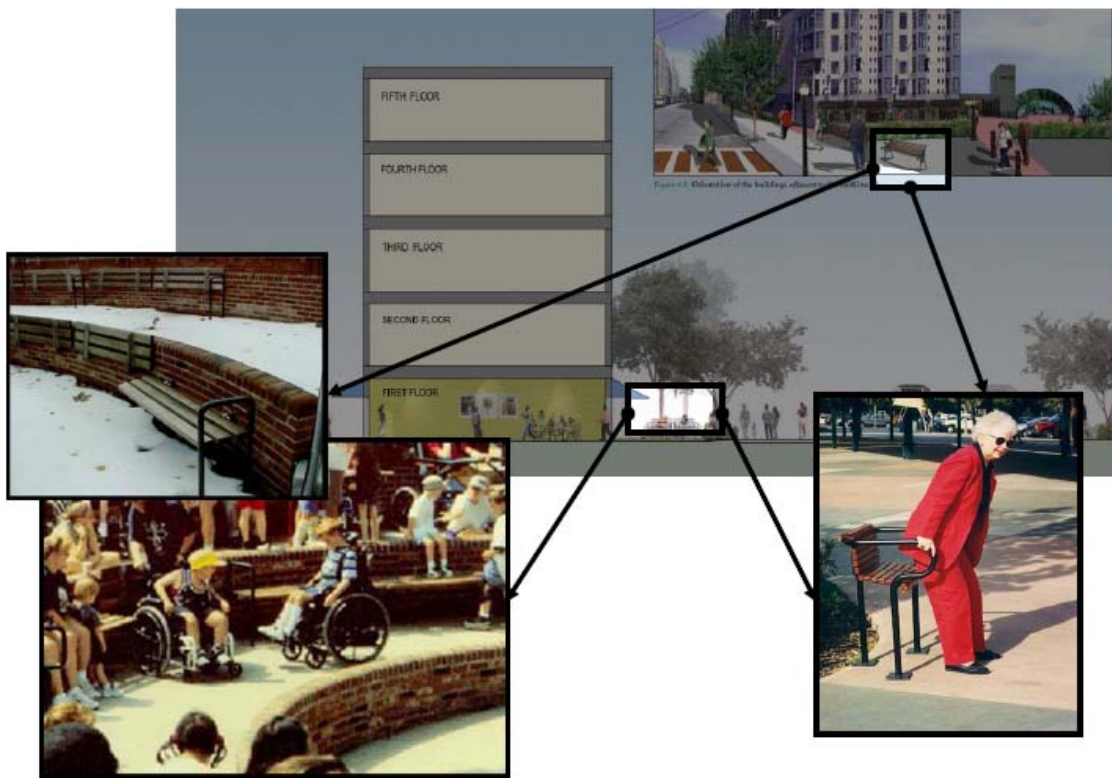


can be perceived with several senses. For example, raised tactile surfaces, materials with contrasting sound properties, grooves, contrasting colors, and audible pedestrian signals can be used as detectable warnings and for wayfinding. Raised tactile surfaces contain textures detectable with the touch of a foot or sweep of a cane to warn for upcoming hazards or changes in the pedestrian environment. Raised tactile surfaces include truncated domes, patterned panels, and other textured designs which can be integrated into the design of crosswalks, intersections, and other instances of the built environment.

**Tolerance for error** requires designs that minimize hazards and accidents through warnings and the elimination, isolation, or shielding of hazardous elements. The design should seek to minimize unconscious actions for tasks requiring attention, and to encourage users to be aware of their environments. Sidewalks and crossings are important to maximize mobility and minimize hazards for individuals who use wheelchairs, walkers and canes as well as those with an irregular or unsteady gait.

According to the **low physical effort** principle, products, buildings, and environments should be designed to be used efficiently and comfortably without the need of an extra operating force, awkward body position, unnecessary repetitive actions, or sustained physical effort. For example, the connectivity of neighborhoods through a web of streets and trails will decrease the time and effort spent reaching destinations compared to conventional community development with dead-end streets and cul-de-sacs. Another opportunity to provide amenities that require low physical effort can be found in seating features. For instance, a bench with a higher seat and handles can support elderly for sitting down and standing up and can also be used by able bodied users. Adjustable seating at public spaces can provide flexible use for wheel chair users as well as for all others (see FIGURE A.6).

**FIGURE A.6 – Seating Features to Accommodate Special Needs and Be Inclusive For All Ability Levels**



The principle of **size and space for approach and use** states that a design should be an appropriate size for the intended use (i.e., sufficiently large or small) and provide enough space for approach and use by people with different body sizes, assistive devices, or personal assistants. Components should be reachable by all heights and can be operable by all hand and grip sizes. For instance, pedestrian crosswalk signals, trash cans, and other objects in the built environment should be in compliance with this principle. The design guidelines state that developments and facilities in the built environment should meet applicable Americans with Disabilities Act (ADA) standards. However, there are points where ADA is not sufficient to enable mobility to wheelchair users due to recommended widths of the sidewalks and cross slopes. The width of the sidewalks should be such that two wheelchair users can stroll together, side-by-side or with able-bodied companions and would not be limited by the presence of others. In this instance, the Atlanta Development Authority guidelines exceed ADA standards (see FIGURE A.7).

**FIGURE A.7 – Wide Paths and Sidewalks with Adequate Use for Everyone**

